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**CHEMICAL
RESEARCH,
DEVELOPMENT &
ENGINEERING
CENTER**

CRDEC-SP-049

**CATALOG OF CHEMICALS CONTAINED
IN CHEMICAL DETECTOR, DECONTAMINATING,
AND TRAINING KITS**

Peter Spaeth

COMPLIANCE MANAGEMENT DIRECTORATE

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Aberdeen Proving Ground, Maryland 21010-5423

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PREFACE

The purpose of this report is to provide a listing of chemical substances contained in various types of kits developed and fielded by the U.S. Army Chemical Research, Development and Engineering Center. This report is intended to be used by Government-operated, poison control centers and medical aid stations as a source of information to aid in the emergency treatment of government personnel or individuals of the general public accidentally exposed to the substances contained in these kits.

The information herein is subject to change as research, development, production, and fielding efforts progress on the various kits, which are part of the U.S. Army Chemical Research, Development and Engineering Center. This publication will be updated as changes occur or when more current data are available.

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CATALOG OF CHEMICALS CONTAINED
IN CHEMICAL DETECTOR, DECONTAMINATING, AND TRAINING KITS

SECTION I. INTRODUCTION

1-1. **Purpose and Applicability.** This catalog provides reference information to Government-operated poison control centers and medical aid stations to be used in providing emergency treatment to anyone accidentally exposed to the chemical substances incorporated as part of the various kits. This document identifies chemical substances incorporated into the kits, and also, where possible, gives a description of the substance form and the quantity of substances(s) in that form. Information contained within this catalog is for persons utilizing these items and is for informational purposes.

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SECTION II. KITS AND CONTENTS

2-1. Decontaminating Agent, DS2.

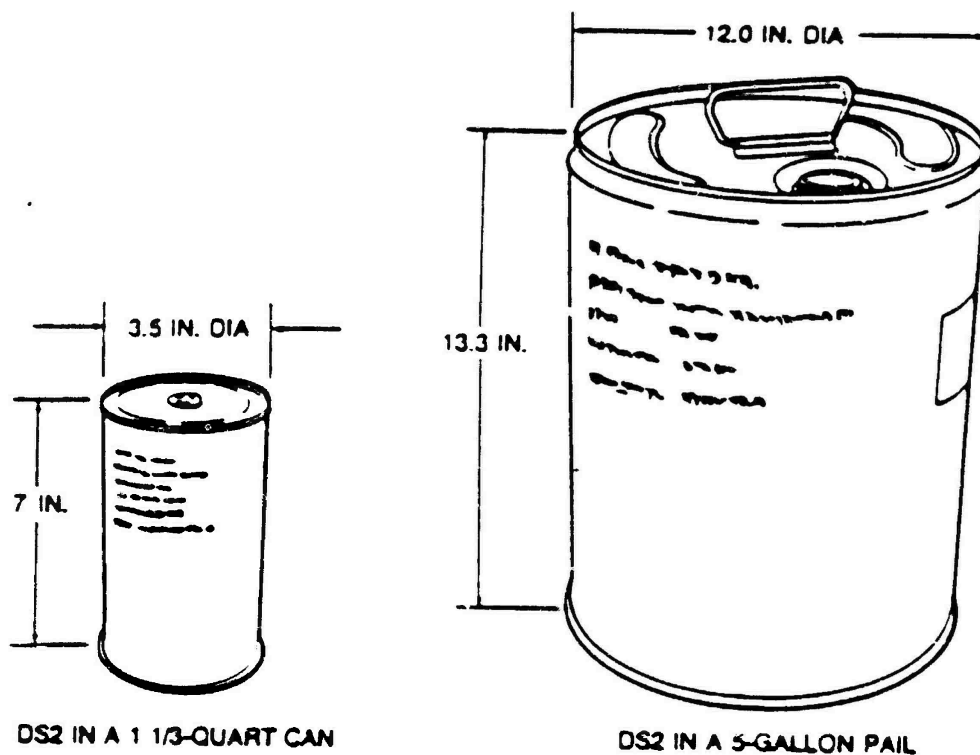


Figure 1. Decontaminating Agent, DS2

Compound	Total Quantity/Kit
Diethylenetriamine	70 wt%
Sodium Hydroxide	2%
Ethylene Glycol Monomethyl Ether	28%

2-2. Decontaminating and Reimpregnating Kit, Individual, ABC-M13.

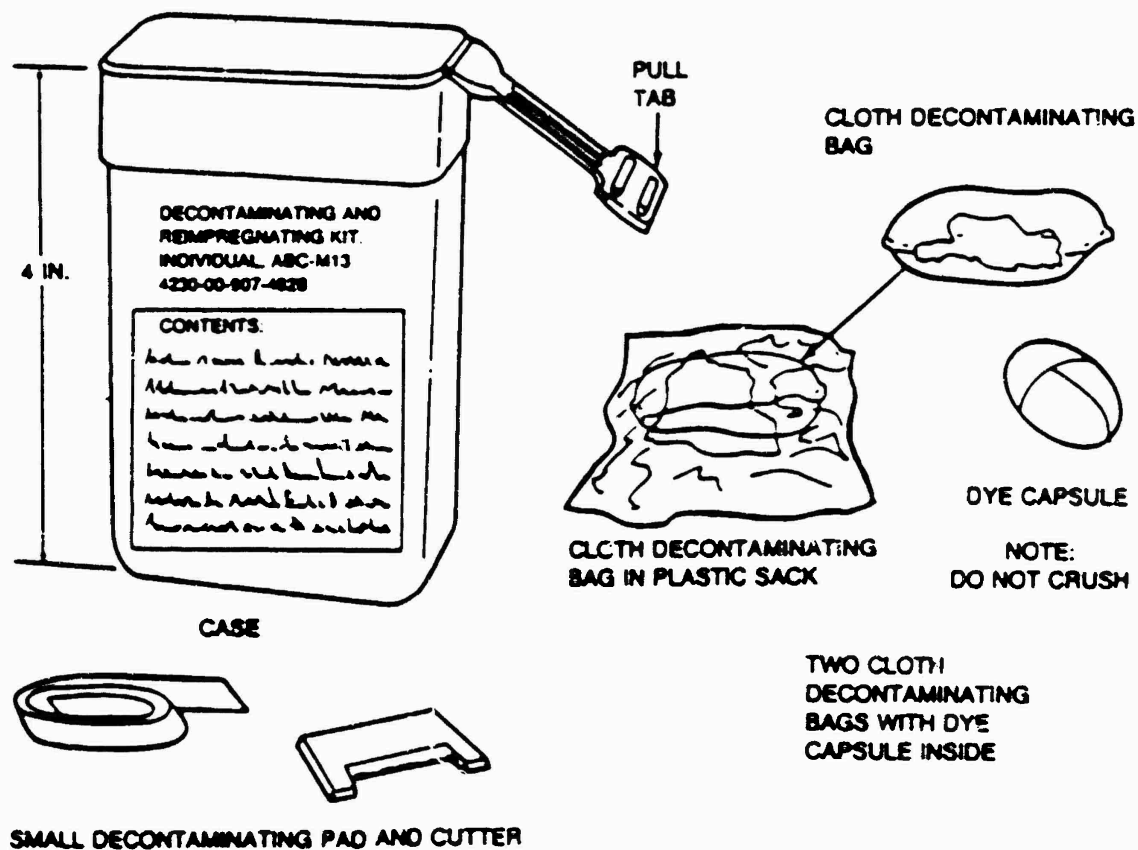


Figure 2. Decontaminating and Reimpregnating Kit: Individual, ABC-M13

Form	Content/Unit	Total Quantity/Kit
Cloth bag (two) (each sealed in polyethylene bag)	Zinc oxide	65.0 gm
	Symmetrical-dichloro- bis(2,4,6-trichloro phenyl) urea	58.5 gm
Capsule	p-Nitrophenylazo-beta- naphthylamine	1.4 gm
Cloth pad	Fuller's earth	20.0 gm

2-3. Decontaminating Kit, Skin, M258/M258A1.

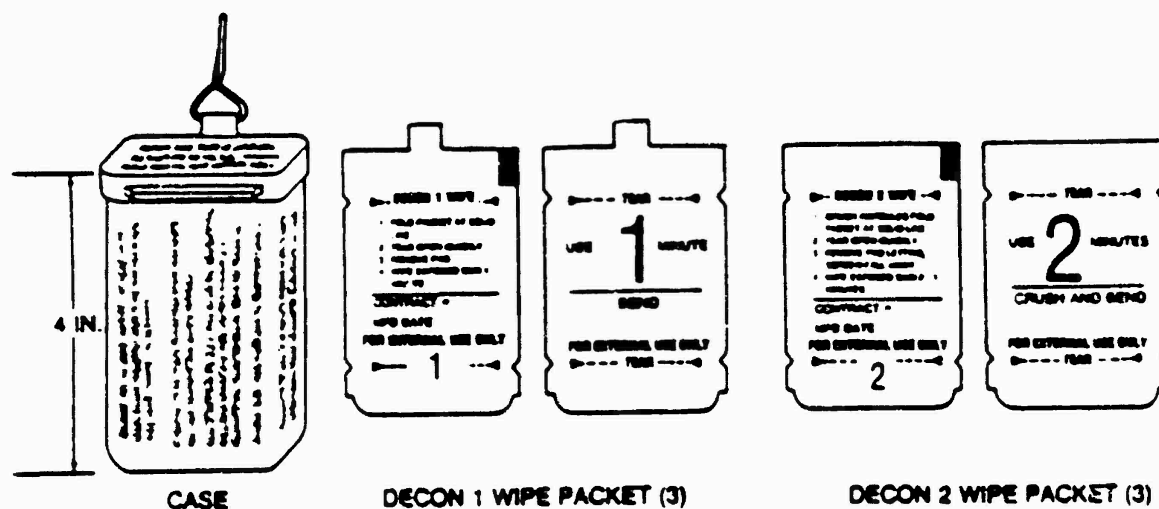


Figure 3. Decontaminating Kit, Skin, M258/M258A1

Form	Content/Unit	Total Quantity/Kit
Capsule I	1-Hydroxyethane (72%) phenol (10%), sodium hydroxide (5%), and ammonia (0.2%) - 87.2% in water solution.	40.0 ml
Capsule II	1-Hydroxyethane (44%) and zinc chloride (5%) - 50% in water solution.	53.0 ml
Ampoule (inside of capsule II)	Chloramine-B (dry) (Sodium benzenesulfon- chloramine)	16.0 gm

2-4. Detector Kit, Carbon Monoxide, Colorimetric, M23.

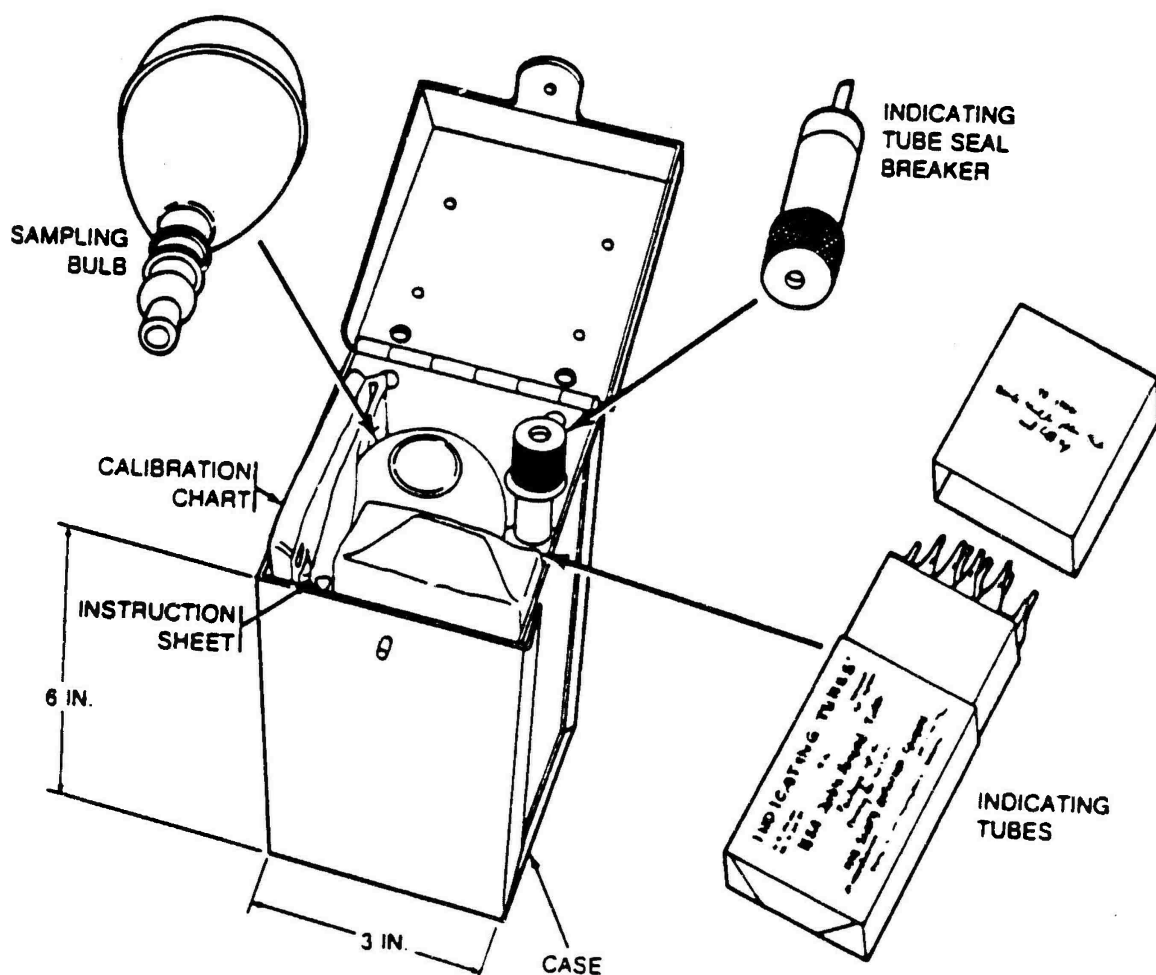


Figure 4. Detector Kit, Carbon Monoxide, Colorimetric: M23

Form	Content/Unit	Total Quantity/Kit
Indicator tube	Indicating gel	
Carbon monoxide	Palladium sulfate (0.00123 gm/tube)	0.01476 gm
	Ammonium Molybdate (0.001122 gm/tube),	0.013464 gm
	Guard gel pure silica gel	
	12 tubes/box, 1 box kit	

2-5. Detector Kit, Chemical Agent, M256.

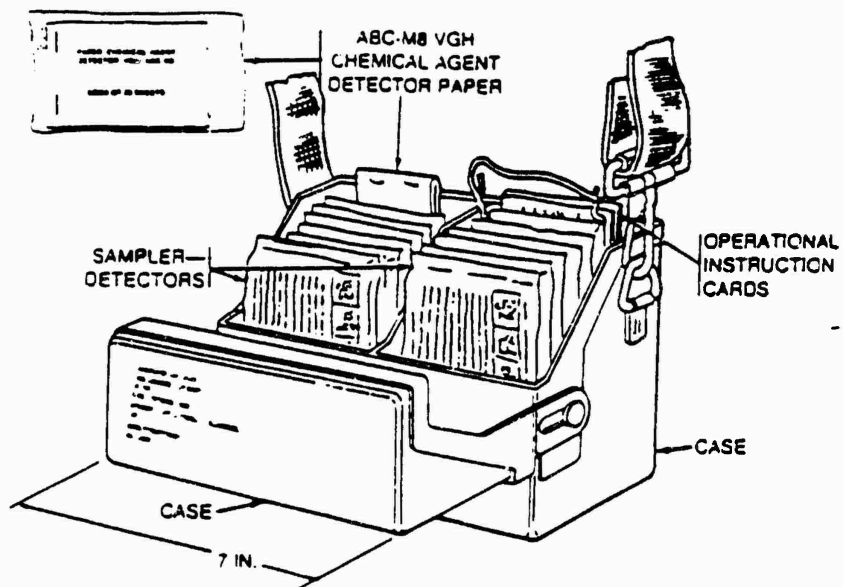
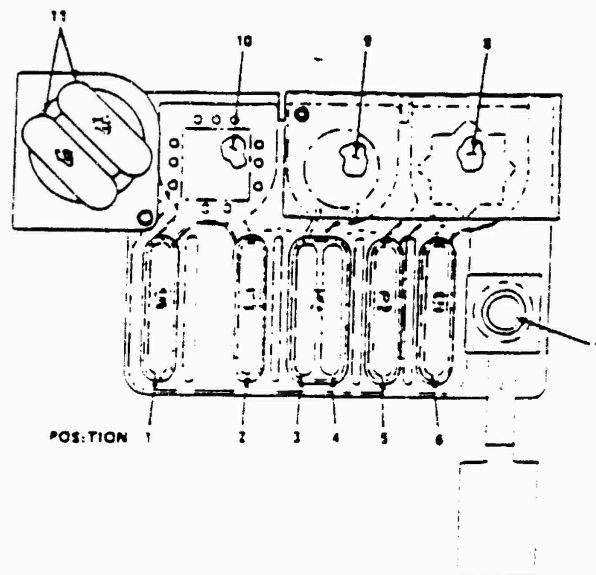


Figure 5. Detector Kit, Chemical Agent: M256



Location of Components of the M256 Chemical Agent Detector Kit

Each M256 Chemical Agent Detector Kit contains 12 samplers and a booklet of M8 paper.

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (clear liquid, Position #1)	Potassium carbonate (0.24 gm/ampoule) Water (0.4 ml/ampoule) 1 ampoule sampler	2.88 gm 4.80 ml

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 3 (clear liquid, Position #2)	4-(4'-nitrobenzyl) pyridine (0.00225 gm/ampoule) and Mercuric cyanide (0.00264 gm/ampoule) in Methanol (0.2 ml/ampoule) 1 ampoule/sampler	0.027 gm 0.032 gm 2.4 ml
Ampoule No. 3 (clear liquid with green pellets, Position #3)	4 parts of 4-benzyl pyridine in 396 parts of 2-methoxy ethanol (0.4 ml/ampoule) 1 ampoule/sampler	4.8 ml
Ampoule No. 3 (clear liquid, Position #4)	Sodium hypochlorite (0.79%) in water (0.15 ml/ampoule) 1 ampoule/sampler	1.8 ml
Ampoule No. 3 (clear liquid with orange pellet, Position #5)	Buffer pH8: Tris-(hydroxymethyl)- amino-methane (0.00303 gm/ampoule) Hydrochloric acid, 0.1N (0.143 ml/ampoule) Aerosol OT (0.13 mg/ampoule) 1 ampoule/sampler	0.0363 gm 1.72 ml 1.56 mg
Ampoule No. 5 (orange liquid, Position #6)	2,6-Dichloroindophenyl acetate (0.195 mg/ampoule) Ligroine (0.3 ml/ampoule) 1 ampoule/sampler	0.00234 gm 3.6 ml
Pellet (tab 1, Position #7)	4,4-Bis(dimethylamino)- thio-benzophenone (0.022 gm/tablet) Zinc oxide (0.088 gm/tablet) Titanium dioxide (0.088 gm/tablet) Amorphous silica (0.088 gm/tablet) Ball clay (0.0202 gm/tablet) Amioca starch (0.0044 gm/tablet) Microcrystalline cellulose (Avicel) (0.1162 gm/tablet)	0.264 gm 1.056 gm 1.056 gm 1.056 gm 0.242 gm 0.0528 gm 1.394 gm

Form	Content/Unit	Total Quantity/Kit
	Stearic acid (0.0132 gm/tablet) 1 tablet sampler	0.158 gm
Detector spot (star shape, Position #8)	Horse serum cholinesterase (0.2 mg/disk) Gelatin (0.5 mg/spot) impregnated on filter paper disk 1 spot/sampler	2.4 gm 6.0 mg
Detector spot (circular shape, Position #9)	Barbituric acid (1 wt%) impregnated on glass fiber disk 1 spot/sampler	0.48 mg
Detector spot (square, Position #10)	Chromatography grade silica gel paper 1 spot/sampler	
Ampoule No. 4 (double, green liquid, Position #11)	Cupric chloride (0.4 gm/ampoule), Ethylene glycol (0.2 gm/ampoule) Distilled water (0.4 ml/ampoule) 2 ampoules/sampler	9.6 gm 4.8 gm 9.6 ml
Heater (under Ampoule No. 4)	Aluminum powder (0.285 gm/pad) Paper pulp (0.189 gm/pad) 1 pad/sampler	3.42 gm 2.27 gm
ABC-M8 detector paper	See Section 2.15	1 bkit

2-6. Detector Kit, Chemical Agent, M256A1.

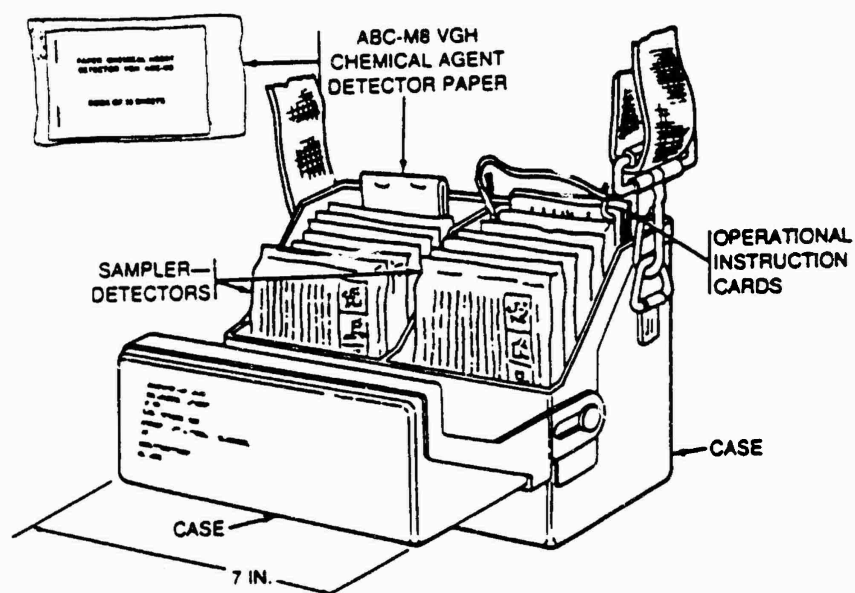
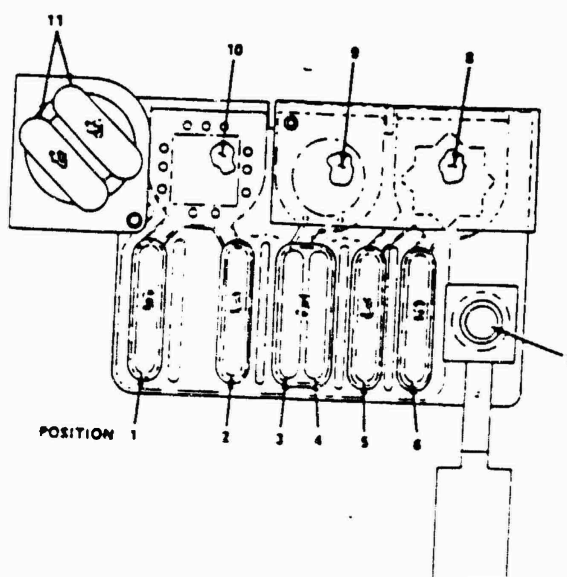


Figure 6. Detector Kit, Chemical Agent: M256A1



Location of Components of the M256A1 Chemical Agent Detector Kit

Each M256A1 Chemical Agent Detector Kit contains 12 samplers and a booklet of M8 paper.

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (clear liquid, Position #1)	Potassium carbonate (0.24 gm/ampoule) Water (0.4 ml/ampoule) 1 ampoule/sample	2.88 gm 4.88 ml

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 3 (clear liquid, Position #2)	4-(4'nitrobenzyl) pyridine (2.25 mg/ampoule) Mercuric cyanide (2.64 mg/ampoule) Methanol (0.2 ml/ampoule) 1 ampoule/sampler	0.027 gm 0.032 gm 2.4 ml
Ampoule No. 3 (clear liquid with green pellet, Position #3)	4 parts of 4-benzyl pyridine in 396 parts of 2-methoxy ethanol (0.4 ml/ampoule) 1 ampoule/sampler	4.8 ml
Ampoule No. 3 (clear liquid, Position #4)	Sodium hypochlorite (0.79%) Water (0.15 ml/ampoule) 1 ampoule/sampler	1.8 ml
Ampoule No. 3 (clear liquid with orange pellet, Position #5)	Buffer pH8: Tris-(hydroxymethyl)- amino-methane (0.00303 gm/ampoule) Hydrochloric acid, 0.1N (0.143 ml/ampoule) Aerosol OT (0.13 mg/ampoule) 1 ampoule/sampler	0.03636 gm 1.72 ml 1.56 mg
Ampoule No. 5 (Position #6)	Indoxyl acetate (2.5 mg/ampoule) Tetrahydrofuran (0.05 ml/ampoule) Ligroine (0.475 ml/ampoule) 1 ampoule/sampler	0.03 gm 0.6 ml 5.7 ml
Pellet (tab 1, Position #7)	4,4-Bis(dimethylamino)- thiobenzophenone (0.022 gm/tablet) Zinc oxide (0.088 gm/tablet) Titanium dioxide (0.088 gm/tablet) Amorphous silica (0.088 gm/tablet) Ball clay (0.0202 gm/tablet) Amioca starch (0.0044 gm/tablet)	0.264 gm 1.056 gm 1.056 gm 1.056 gm 0.2424 gm 0.0528 gm

Form	Content/Unit	Total Quantity/Kit
	Microcrystalline cellulose (Avicel) (0.11629 gm/tablet)	1.34 gm
	Stearic acid (0.0132 gm/tablet) 1 tablet sampler	0.158 gm
Detector spot (star shape, Position #8)	Eel acetyl cholinesterase (5 units/sampler, or 0.016 mg/sampler) Buffer pH8: Piperazine-N,N'-bis-(2- hydroxypropane sulfonic acid) 2H ₂ O (POPSO) 9.96 mg/sampler	0.192 mg 0.1195 gm
	Bovine serum albumin (0.25 mg/sampler)	0.003 gm
	1% Triton X-100 (0.00075 ml/sampler)	0.009 ml
Detector spot (circular shape, Position #9)	1% by weight of Barbituric acid impregnated on glass fiber disk 1 spot/sampler	0.48 mg
Detector spot (square, Position #10)	Chromatography grade silica gel paper	
Ampoule No. 4 (double, Position #11)	Cupric chloride (0.8 gm/ampoule) Ethylene glycol (0.4 gm/ampoule) Distilled water (0.8 ml/ampoule) 1 ampoule/sampler	9.6 gm 4.8 gm 9.6 ml
Heater (under (Ampoule No. 4)	Aluminum powder (0.285 gm/pad) Paper pulp (0.189 gm/pad) 1 pad/sampler	3.42 gm 2.27 gm
ABC-M8 detector paper	See section 2.15	1 bkt

2-7. Detector Kit, Chemical Agent: ABC-M18A2.

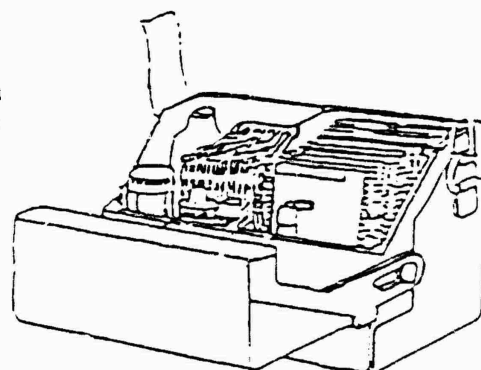
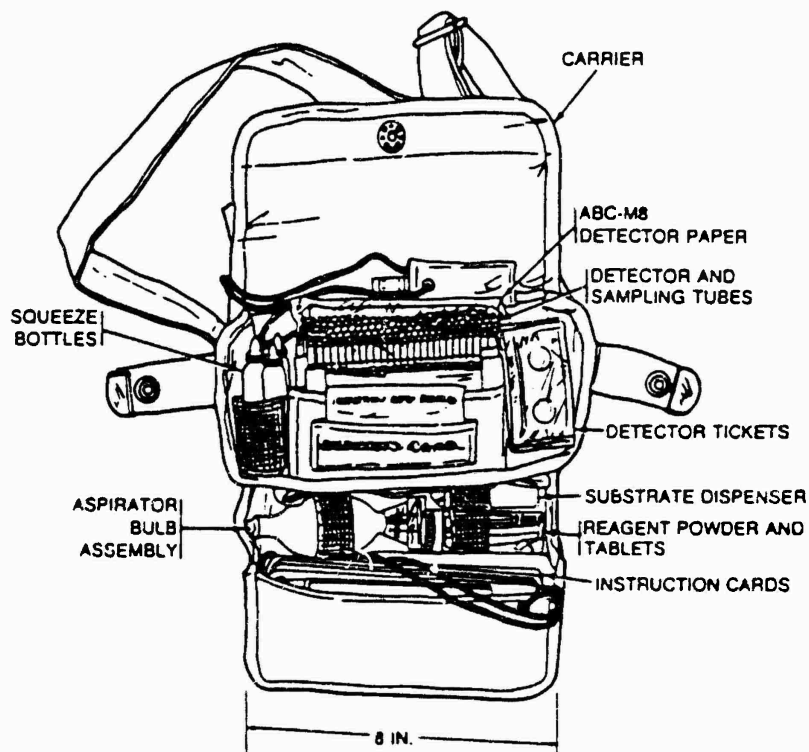


Figure 7. Detector Kit, Chemical Agent: ABC-M18A2

ABC-M18A2 with plastic carrying case

Form	Content/Unit	Total Quantity/Kit
Detector tube/ blue band	Silica gel (0.024 gm/tube) Mercuric cyanide (0.00028 gm/tube) 4-(4'-nitrobenzyl) - pyridine (0.00018 gm/tube) 25 tubes/clip, 2 clips/kit	1.2 gm 0.014 gm 0.009 gm
Detector tube/ red band	Silica gel (0.05 gm/tube) Copper sulfate (0.00018 gm/tube) p,p'-Tetramethyldiamino- diphenylmethane (0.000006 gm/tube) Charcoal (0.02 gm) 25 tubes/kit	1.2 gm 0.0045 gm 0.00015 gm 0.5 gm

Form	Content/Unit	Total Quantity/Kit
Detector tube/ green band	Silica gel	0.6 gm
	(0.024 gm/tube)	
	p, Dimethylaminobenzal- dehyde	6.0 mg
	(0.24 mg/tube)	
	N-phenyl-1-naphthylamine	6.0 mg
Detector tube/ yellow band	(0.24 mg/tube)	
	Thiourea	0.6 gm
	(0.024 mg/tube)	
	25 tubes/clip, 1 clip kit	
Detector tube/ white band	Silica gel	0.6 gm
	(0.024 gm/tube)	
	Ammonium molybdate	33 mg
	(0.00132 gm/tube)	
	Zinc sulfate	33 mg
Straws/white powder	(0.00132 gm/tube)	
	25 tubes/clip, 1 clip/tube	
Tablet/compound 34	Silica gel	0.6 gm
	(0.024 gm/tube)	
	25 tubes/clip, 1 clip/kit	
Blue top bottle	Sodium pyrophosphate peroxide (0.2 gm/straw)	2.8 gm
	14 straws/kit	
White top bottle	p-Amino-o-oxy-o'-sulfo diphenylamine	74.2 mg
	(0.0053 gm/tablet)	
	Magnesium stearate	14 mg
	(0.001 gm/tablet)	
	Sugar (0.1019 gm/tablet)	1.427 gm
Green top bottle	(108 mg/tablet)	
	14 tablets/kit	
Empty - provided for making a water solution of compound 34 and sodium pyrophosphate peroxide - solution to be made fresh daily.	Sodium hydroxide- crystalline	0.68 gm
	1 bottle/kit	
Buffer pH8:	Tris-(hydroxymethyl)-amino methane (0.0509 gm/bottle)	51 mg
	Water	8 ml
	1 bottle/kit	

Form	Content/Unit	Total Quantity/Kit
Red top dispenser (substrate)	2, 6-Dichloroindophenyl acetate (0.0124 gm/bottle) Ligroine (8 ml/bottle) 1 bottle kit	8 ml
Detector ticket	Horse serum cholinesterase (0.2 mg/disk) impregnated on a glass fiber disk 2 disks/ticket, 40 tickets/belt, 1 belt/kit	16 mg
ABC-M8 detector paper	See Section 2.15	1 bkit

2-8. Detector Kit, Chemical Agent, VGH, AN-M15A2. Illustration not shown

Form	Content/Unit	Total Quantity/Kit
Detector tube/blue band	Silica gel (0.024 gm tube) Mercuric cyanide (0.00028 gm/tube) 4-(4'-nitrobenzyl)- pyridine (0.00018 gm/tube) 25 tubes/clip, 2 clips/kit	1.2 gm 0.014 gm 0.009 gm
Straws/white powder	Sodium pyrophosphate peroxide (0.2 gm/straw) 14 straws/kit	2.8 gm
Tablet/compound 34	p-Amino-o-oxy-o'-sulfo- diphenylamine (0.0053 gm/tablet) Magnesium stearate (0.001 gm/tablet) Sugar (0.1019 gm/tablet) 108 mg/tablet, 14 tablets/kit	74.2 mg 14 mg 1.427 gm
Blue top bottle	Sodium hydroxide- crystalline 1 bottle/kit	0.68 gm

Form	Content/Unit	Total Quantity/Kit
White top bottle	Buffer pH8: Tris-(hydroxymethyl)- amino-methane (0.0509 gm/bottle)	51 mg
	Water 1 bottle/kit	8 ml
Green top bottle	Empty - provided for making a water solution of sodium pyrophosphate peroxide and compound 34. Solution to be made fresh daily.	
Red top dispenser (substrate)	2,6 Dichloroindophenyl acetate (0.0124 gm/bottle) Ligroine (8 ml/bottle) 1 bottle kit	8 ml
Detector ticket	Horse serum cholinesterase (0.2 mg/disk) impregnated on a glass fiber disk 2 disks/ticket, 40 tickets/ belt, 1 belt/kit	16 mg
ABC-M8 detector paper	See Section 2.15	1 bkit

2-9 Detector Unit, Chemical Agent, Automatic ABCA M43.

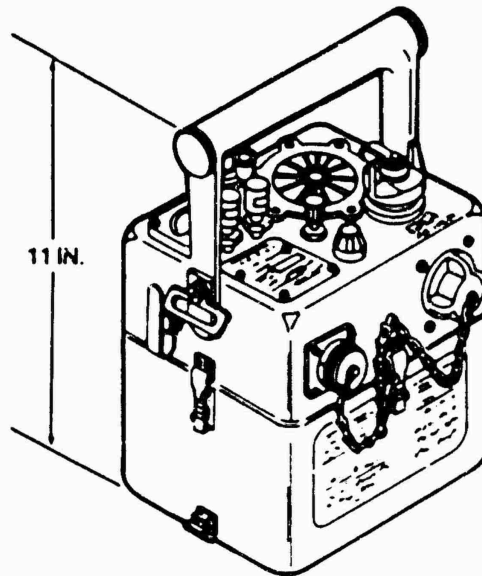


Figure 8. M43/M43A1 Detector

Form	Content/Unit	Total Quantity/Kit
Detector cell	No liquid chemicals, 99.99% pure silver components, and platinum- coated titanium 1 cell/detector unit	

2-10. Detector Unit, Chemical Agent, Automatic M43A1. See prior illustration.

Form	Content/Unit	Total Quantity/Kit
Detector cell	No liquid chemicals, radioactive source: 2 cm ² Americium-241, at 125 + 20% microcuries/cm ² ; total 250 + 20% microcuries (one side only)	

2-11. Hydrazine Detector Tubes. Illustration not shown.

Form	Content/Unit	Total Quantity/Kit
MSA Hydrazine tube	Sand impregnated with Silicic acid (0.01 mg/tube)	0.12 mg
	Bromophenol blue indicator (0.02 mg/tube) 12 tubes/box	0.24 mg

Form	Content/Unit	Total Quantity/Kit
DRAEGER Hydrazine tube (Cat #6733121)	Silica gel impregnated with silver nitrate	Trace
DRAEGER Hydrazine tube (Cat #HS-1801)	Silica gel impregnated with acetic acid and bromophenol blue Indicator	Trace

2-12. Indicator Tubes, Carbon Monoxide. Illustration not shown.

Form	Content/Unit	Total Quantity/Kit
Indicator tube, Carbon Monoxide	Indicating gel Palladium sulfate (0.00123 gm/tube) Ammonium Molybdate (0.001122 gm/tube) Guard gel Pure silica gel	0.01476 gm 0.01346 gm

2-13. M273 Maintenance Kit Components.

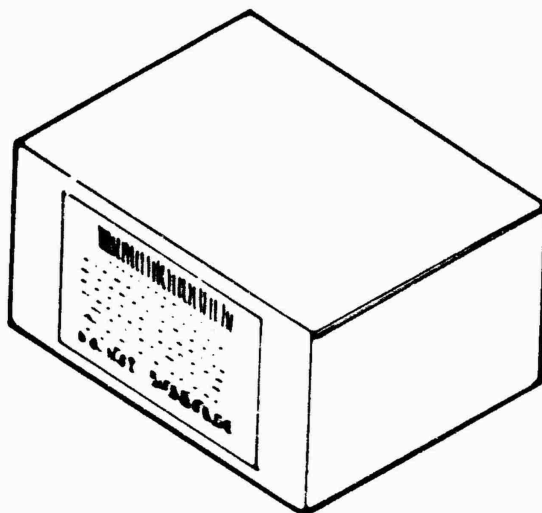


Figure 9. M273 Maintenance Kit

Form	Content/Unit	Total Quantity/Kit
Simulant Paddle	Dimethyl Methyl Phosphonate (DMMP) 3 wt % (0.2 gm/paddle) 10 paddles/kit	0.2 gm

2-14. Paper, Chemical Agent Detector, M9.

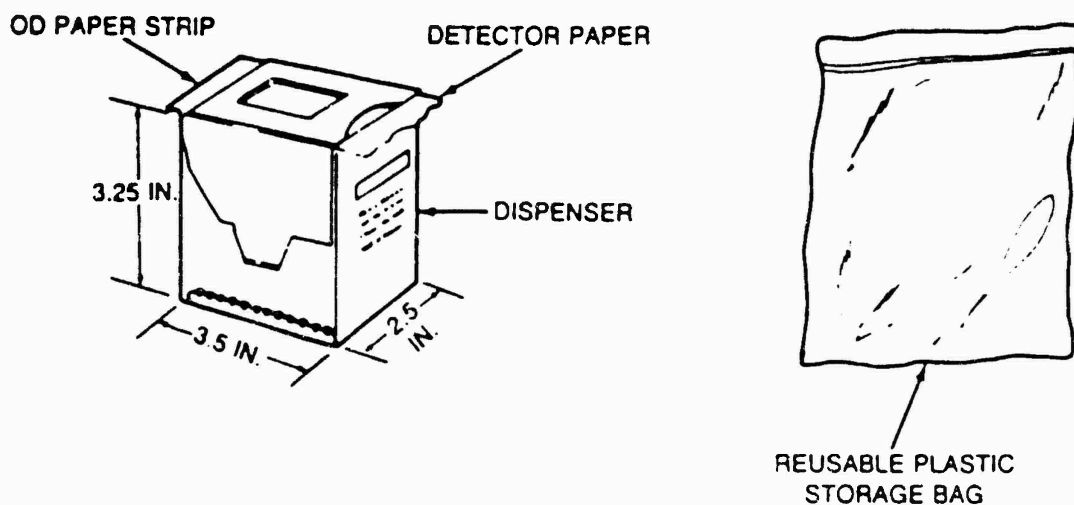


Figure 10. Paper, Chemical Agent, Detector: M9

The following materials are dispersed throughout the roll of paper:

Form	Content/Unit	Total Quantity/Kit
1 wt %	B-1 Dye (1-4'-nitro-phenylazo - 2 - naphthaleneamine)	0.378 gm/roll
3 wt %	Aum (Aluminum Sulfate $Al_2(SO_4)_3$)	1.13 gm/roll
0.16 wt %	Pigment blue 15	0.06 gm/roll
1.6 wt %	Yellow iron oxide	0.6 gm/roll
0.05 wt %	Calcatone (carbon) black	0.019 gm/roll

2-15. Paper, Chemical Agent Detector: M9 (See prior illustration) (NSN 6665-01-226-5589)

The following materials are dispersed throughout the roll of paper:

Form	Content/Unit	Total Quantity/Kit
	Aum (Aluminum Sulfate)	0.9 gm
	Rosin	0.7 gm
	Pigment blue 15	0.08 gm
	Yellow iron oxide	0.4 gm
	SR119 dye	0.5 gm

2-16. Paper, Chemical Agent Detector, VGH, ABC-M8.

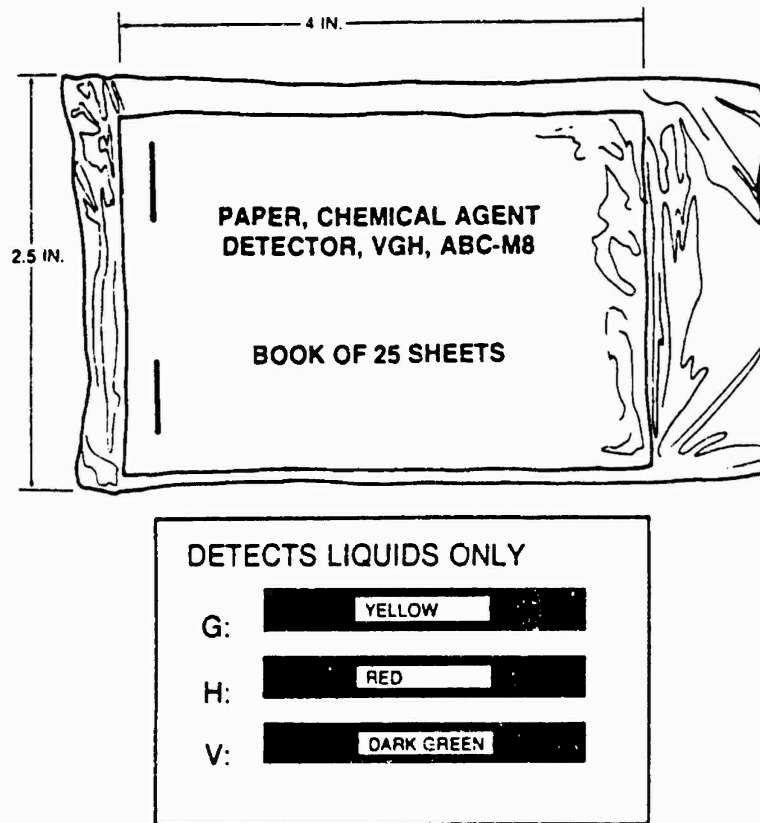


Figure 11. Paper, Chemical Agent, Detector : VGH, ABC-M8

The following weights of dyes are dispersed intimately through the paper:

Ethyl-bis(2,4-dinitrophenyl) acetate (Eastman Kodak) (Green Dye)	0.13 gm/bklt
Thiodiphenyl-4,4'-diazo-bis-salicylic acid (National Aniline) (yellow Dye)	0.17 gm/bklt
2,5,2',5'-Tetramethyltriphenyl- methane-4,4'-diazo-bis-beta hydroxynaphthoic anilide (Imperial Chemical Industries) (Red Dye)	0.08 gm/bklt
25 sheets/booklet	

2-17. Refill Kit, M229.

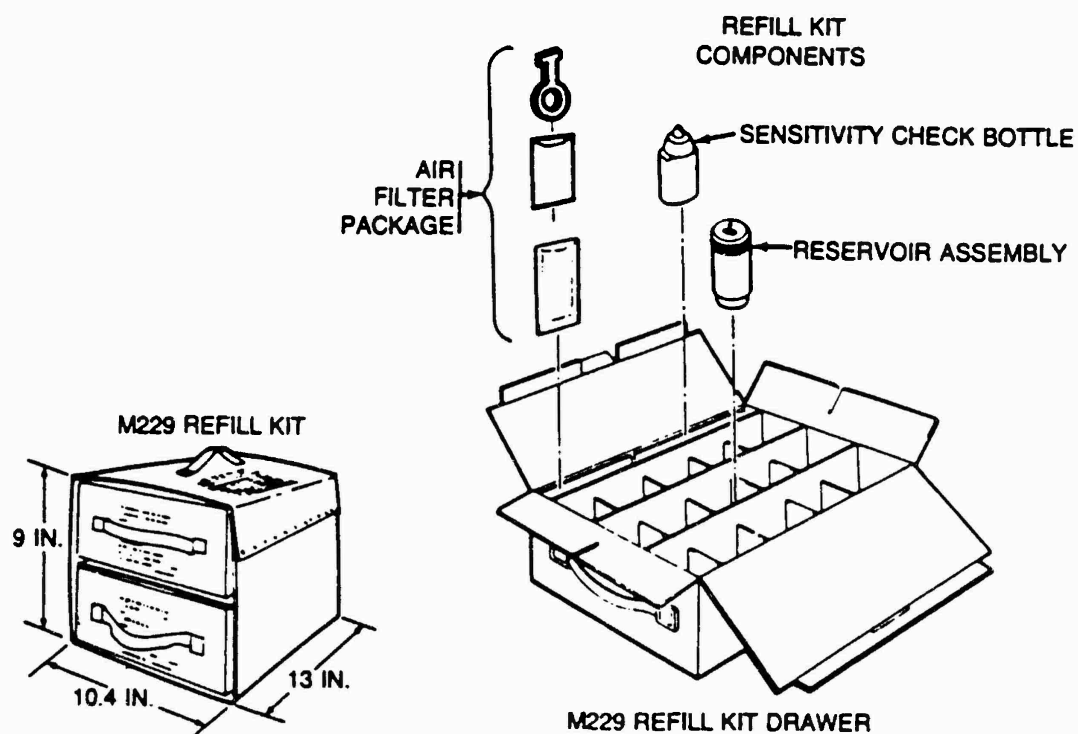
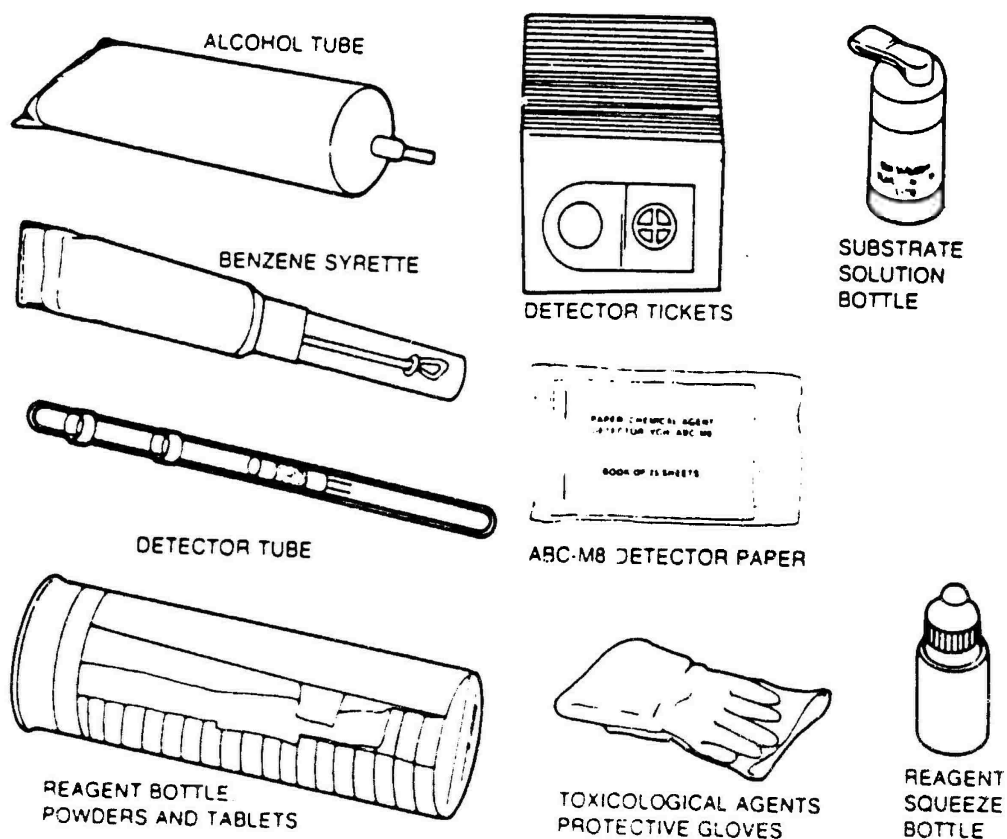


Figure 12. Refill Kit, Chemical Agent Automatic Alarm: M229

Form	Content/Unit	Total Quantity/Kit
Buffer Solution	Potassium Hydroxide (3.5 gm/bottle)	9.45 gm
	Sodium Tetraborate Decahydrate (1.05 gm/bottle)	31.5 gm
	Ethylene Glycol (1.05 ml/bottle)	31.5 gm
	Deionized Water (1.04 ml/bottle)	3118 ml
	105 ml/bottle, 30 bottles/kit	
Capsule	Isonitrosobenzoyl Acetone (IBA) (0.75 gm/capsule) 30 capsules/kit	22.5 gm
Simulant Solution	Benzenesulfonyl Chloride	0.004 ml
	Diethyl Phthalate 1 bottle/kit	8 ml

Form	Content/Unit	Total Quantity/Kit
Filters	Silver Nitrate	22.5 gm
	(0.375 gm/filter)	
	Potassium Fluoride, crystal	15 gm
	(0.25 gm/filter)	
	Ethyl Alcohol	15 ml
	(0.25 ml/filter)	
	60 filters/kit	

2-18. Refill Kit, Analyzing Components, CBR Agent Sampling and Analyzing Kit, M33.



NOTE ONLY REPRESENTATIVE COMPONENTS ARE SHOWN

Figure 13. Refill Kit, Analyzing Components, CBR Agents Sampling and Analyzing Kit: M33

a. Paper, Chemical Agent Detector, VGH, ABC-M8 (2 bkls/kit) See Section 2-15.

Form	Content/Unit	Total Quantity/Kit
Detector tube/ blue band	Silica gel (0.024 gm/tube) Mercuric cyanide (0.00028 gm/tube) 4-(4'-nitrobenzyl)- pyridine (0.00018 gm/tube) 25 tubes/clip 2 clips/kit	1.2 gm 0.014 gm 0.009 gm
Detector tube/ red band	Silica gel (0.05 gm/tube) Copper sulfate (0.00018 gm/tube) p,p'-Tetramethyldiamino- diphenylmethane (0.000006 gm/tube) Charcoal (0.02 gm) 25 tubes/kit	1.2 gm 0.0045 gm 0.00015 gm 0.5 gm
Detector tube/ green band	Silica gel (0.024 gm/tube) p-Dimethylaminobenzaldehyde (0.24 mg/tube) N-phenyl-1-naphthylamine (0.24 gm/tube) Thiourea (0.024 mg/tube) 15 tubes/clip, 3 clips/kit	1.08 gm 10.8 gm 10.8 gm 1.08 gm
Detector tube/ yellow band	Silica gel (0.024 gm/tube) Ammonium molybdate (1.32 mg/tube) Zinc sulfate (1.32 mg/tube) 15 tubes/clip, 3 clips/kit	1.08 gm 59.4 mg 59.4 mg
Detector tube/ double yellow band	Silica gel (0.024 gm/tube) Cupric nitrate Potassium iodide 15 tubes/clip, 3 clips/kit	1.08 gm Trace Trace
Detector tube/ double green band	Silica gel (0.024 gm/tube) m-Dinitrobenzene 15 tubes/clip, 3 clips/kit	1.08 gm Trace

Form	Content/Unit	Total Quantity/Kit
Detector tube/ white band	Silica gel (0.024 gm/tube) 15 tubes/clip, 3 clips/kit	8.64 gm
Alcohol tubes	Ethyl alcohol (35 ml/tube) 10 tubes/box, 2 boxes/kit	700 ml
Benzene syrettes	Benzene solution (1.5 ml/syrette) 30 syrettes/box, 1 box/kit	45 ml
b. Reagent containers		
Bottle 1	p-Amino-o-ethoxy-o-sulfo- diphenylamine (compound 34) (2.5 mg/tablet) Magnesium stearate (0.5 mg/tablet) Sugar (remainder) 14 tablets/bottle, 2 bottles/kit	70 mg 14 mg
Bottle 2	Sodium pyrophosphate peroxide (0.2 gm/straw) 14 straws/bottle, 2 bottles/kit	5.6 gm
Bottle 3	Empty (2 bottles)	
Bottle 4	2,6-Dichloroindophenyl acetate in ligroine (0.004 molar) (10 ml/bottle) 2 bottles/kit	20 ml
Bottle 5	Buffer, pH8: Tris-(hydroxymethyl)- aminomethane (0.05 molar) (6.368 gm/ml of water) 8 ml/bottle, 2 bottles/kit	16 ml
Bottle 6	Empty	
Bottle 7	Dragendorff reagent (2.5 ml/bottle) Bismuth oxychloride (0.09 gm/bottle) 2 bottles/kit	5 ml 0.18 gm

Form	Content/Unit	Total Quantity/Kit
Bottle 8	Sodium hydroxide (0.05 gm/bottle) 2 bottles/kit	0.10 gm
Bottle 9	Sodium alizarin sulfonate (1.5 mg/bottle) Thorium nitrate (3.7 mg/bottle) Potassium acid phthalate (38 mg/bottle) Glacial acetic acid (1.5 ml/bottle) 2 bottles/kit	3 gm 7.4 mg 76 mg 3 mg
Bottle 10	N,N'-dichloro-bis (2,4,6-trichloro-phenyl) urea (CC2) (0.004 gm/bottle) Ethyl alcohol (2 ml/bottle) 6 bottles/kit	0.024 mg 12 ml
Bottle 11	Gamma picoline (4-methyl pyridine) (0.66 ml/bottle) 1-Phenyl-3-methyl-5- pyrazolone (0.44 gm/bottle) Ethyl alcohol (1.4 ml/bottle)	3.96 ml 2.64 gm 8.4 ml
Bottle 12	Sodium hydroxide (0.43 gm/bottle) 4 bottles/kit	1.72 gm
Bottle 13	Bromthymol blue solution (7 ml bottle) 2 bottles/kit	14 ml
Bottle 14	Di-(p-biphenyl) thio- carbazone (0.001 gm/bottle) Acetone (2 ml/bottle) 6 bottles/kit	0.006 gm 12 ml
Bottle 15	Ferrous sulphate septahydrate (0.28 gm/bottle) Iron wire (0.003 gm/bottle) 4 bottles/kit	1.12 gm 0.012 gm
Bottle 16	Sulfuric acid (Sp Gr 1.38) (1 ml/bottle) 2 bottles/kit	2 ml
Bottle 17	Nitric acid, concentrated (2 ml/bottle) 2 bottles/kit	4 ml

Form	Content/Unit	Total Quantity/Kit
Bottle 18	DB-3 (4-(4'-nitrobenzyl pyridine) (0.1 gm/bottle) Acetone (2 ml/bottle) 6 bottles/kit	0.6 gm 12 ml
Bottle 19	Ammonium hydroxide concentrated (2 ml/bottle) 2 bottles/kit	4 ml
Bottle 20	Mercuric bromide (0.03 gm/bottle) 4,4'-Bis-(diethylamino) benzophenone (0.01 gm/bottle) Acetone (2 ml/bottle) 4 bottles kit	0.12 gm 8 ml
Bottle 21	Hydroxylamine hydrochloride (0.5 gm/bottle) 2 bottles/kit	1 gm
Bottle 22	4-Nitronaphthalenediazo- amino-4'-azobenzene (0.008 gm/bottle) Ethyl alcohol (2 ml/bottle) 4 bottles/kit	0.032 gm 8 ml
Bottle 23	p,p'-Tetramethyldiaminodi- phenylmethane (0.1 gm/bottle) Ethyl alcohol (2 ml/bottle) 2 bottles/kit	0.2 gm 4 ml
Bottle 24	Sodium hydroxide (0.5 gm/bottle) Sodium sulfite (0.5 gm/bottle) 2 bottles/kit	1 gm 1 gm
Bottle 25	Acetic acid 1.ON (1 ml/bottle) 2 bottles/kit	2 ml
Bottle 26	Tetrabromophthalein ethylester (0.002 gm/bottle) Ethyl alcohol (2 ml/bottle)	0.008 gm 8 ml
Bottle 27	Empty	

Form	Content/Unit	Total Quantity/Kit
Bottle 28	Sodium perborate, tetrahydrate (1 mg/straw)	60 mg
	Sodium chloride (20 mg/straw), 15 straws/bottle, 4 bottles/kit	1200 mg
Bottle 29	Hydrochloric acid, concentrated, (0.75 ml/bottle)	1.5 ml
	Sodium molybdate dihydrate (0.44 gm/bottle)	0.88 gm
	Ortho-dianisidine dihydrochloride (0.008 gm/bottle) 2 bottles/kit	0.016 gm
Bottle 30	Neotetrazolium chloride (0.02 gm/bottle)	0.04 gm
	Ethyl alcohol (2 ml/bottle) 2 bottles/kit	4 ml

c. Dragendorff paper

Form	Content/Unit	Total Quantity/Kit
Packet D	Metaphosphoric acid (0.152 gm)	11.4 gm
	Cadmium iodide (0.067 gm)	5.025 gm
	Bismuth oxychloride (0.21 gm)	15 gm
	Sorbitol (0.2 gm)	15 gm
	1 filter paper/bag, 75 bags/kit	

d. Combination filter paper

Form	Content/Unit	Total Quantity/Kit
Packet X	Glass fiber filter paper	
Detector ticket	Horse serum cholinesterase (0.2 mg) impregnated on a glass fiber disk 2 disks/ticket 40 tickets/kit	16 mg

2-19. Refill Kit, Chemical Agent Detector, V-G Components, ABC-M30A1.

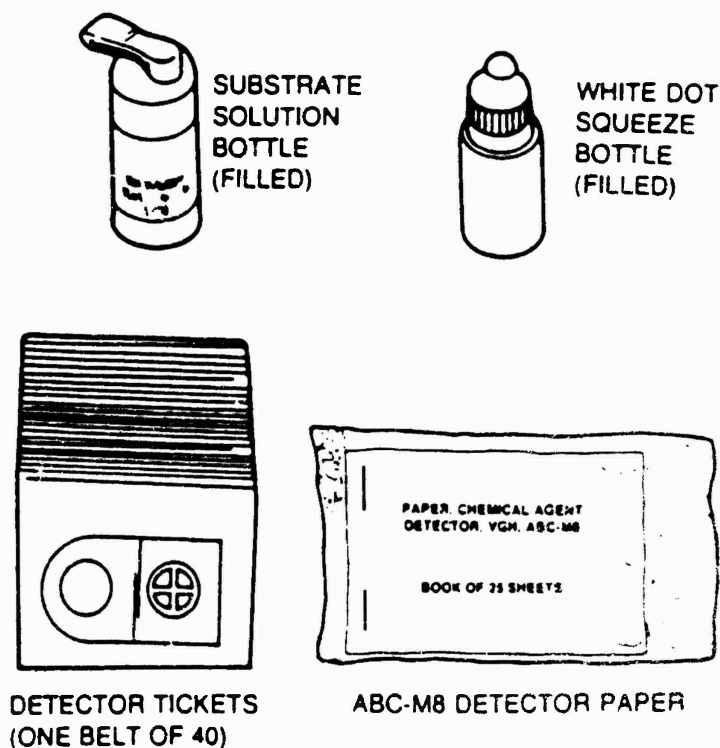


Figure 14. Refill Kit, Chemical Agent Detector: VG Components, ABC-M30A1

Form	Content/Unit	Total Quantity/Kit
ABC-M8 paper	See Section 2-15	1 bkit
Detector tickets	Horse serum cholinesterase (0.2 mg) impregnated on a glass fiber disk 2 disks/ticket, 40 tickets/kit	15 mg
White dot bottle	Buffer, pH8: tris-(hydroxymethyl)- aminomethane (0.006368 gm/ ml of water) 1 bottle/kit	8 ml
Substrate solution	2,6-Dichloroindophenyl acetate (0.1024 gm/bottle)	0.1024 gm
	Ligroine (8 ml/bottle) 2 bottles/kit	16 ml

2-20. Sampling and Analyzing Kit, CBR Agent, M19.

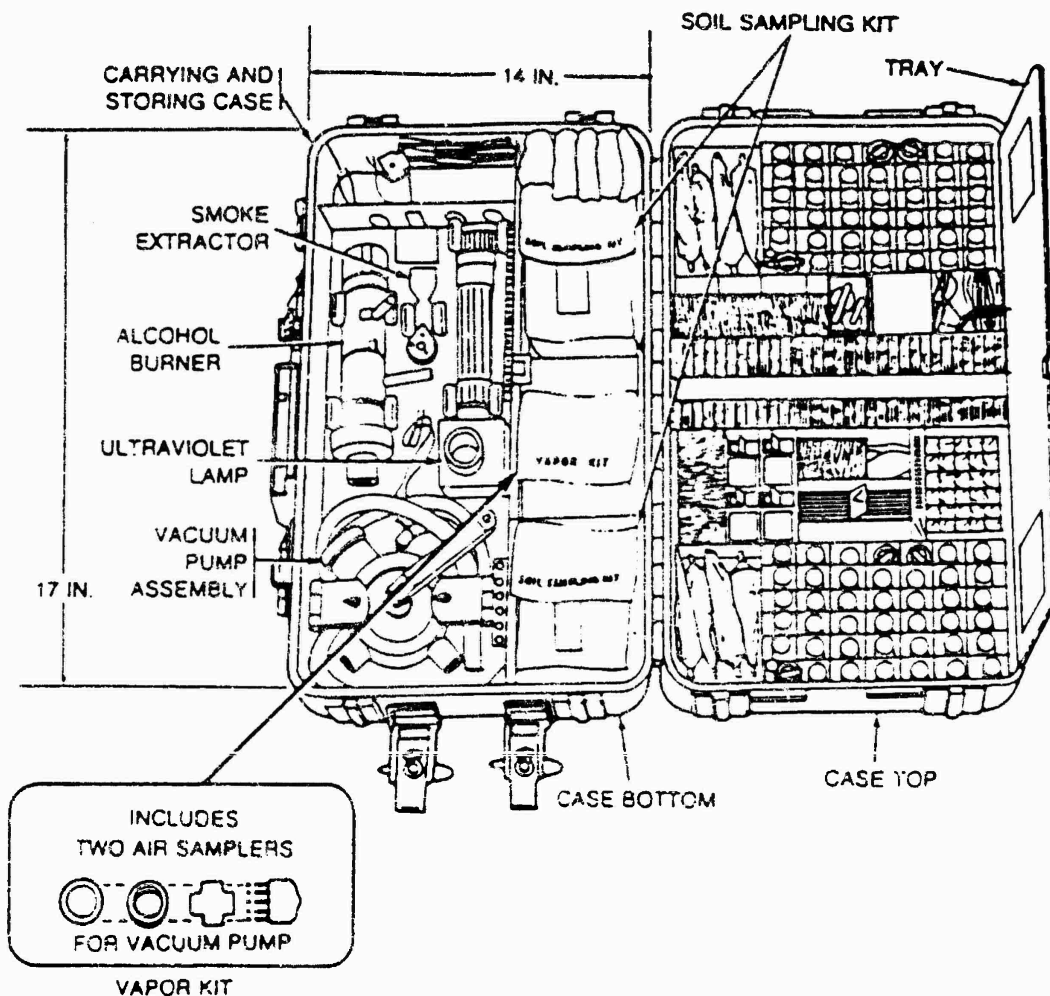


Figure 15. Sampling and Analyzing Kit, CBR Agent, M19

Form	Content/Unit	Total Quantity/Kit
a. Dragendorff paper		
Packet D	Metaphosphoric acid (0.152 gm/bag)	11.4 gm
	Cadmium iodide (0.067 gm/bag)	5.025 gm
	Calcium chloride (0.086 gm/bag)	6.45 gm
	Bismuth oxychloride (0.2 gm/bag)	15 gm
	Sorbitol (0.2 mg/bag) 1 filter paper/bag, 75 bags/kit	15 gm

Form	Content/Unit	Total Quantity/Kit
b. Combination filter paper		
Packet X	Glass fiber paper	
c. Reagent container set (2 sets)		
Bottle 1 (Compound 34)	p-Amino-o-ethoxy-o-sulfo- diphenylamine (0.25 mg/tablet)	70 mg
	Magnesium stearate (0.5 mg/tablet)	14 mg
	Sugar (remainder) 14 tablets/bottle, 2 bottles/kit	
Bottle 2	Sodium pyrophosphate peroxide (0.2 gm/straw) 14 straws/bottle, 2 bottles/kit	5.6 gm
Bottle 3	Empty (2 bottles)	
Bottle 4	2,6-Dichloroindophenyl acetate (0.0124 gm) Ligroine (0.004 molar, 10 ml/bottle) 2 bottles/kit	20 ml
Bottle 5	Buffer, pH8: Tris-(hydroxymethyl)- aminomethane (0.05 molar, 8 ml/bottle) 2 bottles/kit	16 ml
Bottle 6	Empty	
Bottle 7	Modified Dragendorff reagent (2.5 ml/bottle)	5 ml
	Bismuth oxychloride (0.09 gm/bottle) 2 bottles/kit	0.18 gm
Bottle 8	Sodium hydroxide (0.05 gm/bottle) 2 bottles/kit	0.10 gm

Form	Content/Unit	Total Quantity/Kit
Bottle 9	Sodium alizarin sulfonate (15 mg/bottle)	3 mg
	Thorium nitrate (3.7 mg/bottle)	7.4 mg
	Potassium acid phthalate (38 mg/bottle)	76 mg
	Glacial acetic acid (1.5 ml/bottle)	3 mg
	2 bottles kit	
Bottle 10	N,N'-dichloro-bis (2,4,6-trichloro-phenyl) uracil (CC2) (0.004 gm/bottle)	0.024 gm
	Ethyl alcohol (2 ml/bottle)	12 ml
	6 bottles /kit	
Bottle 11	Gamma picoline (4-methyl pyridine) (0.66 ml/bottle)	3.96 ml
	1-Phenyl-3-methyl-5- pyrazolone (0.44 gm/bottle)	2.64 gm
	Ethyl alcohol (1.4 ml/bottle)	8.4 ml
	6 bottles/kit	
Bottle 12	Sodium hydroxide (0.43 gm/bottle)	1.72 gm
	4 bottles/kit	
Bottle 13	Bromthymol blue solution (7 ml/bottle)	14 ml
	2 bottles/kit	
Bottle 14	Di(p-biphenyl) thio- carbazone (0.001 gm/bottle)	0.006 gm
	Acetone (2 ml/bottle)	12 ml
	6 bottles/kit	
Bottle 15	Ferrous sulphate septahydrate (0.28 gm/bottle)	1.12 gm
	Iron wire (0.003 gm/bottle)	0.012 gm
	4 bottles/kit	
Bottle 16	Sulfuric acid (Sp Gr 1.38) (1 ml/bottle)	2 ml
	2 bottles/kit	

Form	Content/Unit	Total Quantity/Kit
Bottle 17	Nitric acid concentrated (2 ml/bottle) 2 bottles/kit	4 ml
Bottle 18	DB-3 (4-(4'-nitrobenzyl) pyridine) (0.1 gm/bottle) Acetone (2 ml/bottle) 6 bottles/kit	0.6 gm 12 ml
Bottle 19	Ammonium hydroxide, concentrated (2 ml/bottle) 2 bottles/kit	4 ml
Bottle 20	Mercuric bromide (0.03 gm/bottle) 4,4'-Bis-(diethylamino) benzophenone (0.01 gm/bottle) Acetone (2 ml/bottle) 4 bottles/kit	0.12 gm 0.04 gm 8 ml
Bottle 21	Hydroxylamine hydrochloride (0.5 gm/bottle) 4 bottles/kit	1 gm
Bottle 22	4-Nitronaphthalenediazo- amino-4'-azobenzene (0.008 gm/bottle) Ethyl alcohol (2 ml/bottle) 4 bottles/kit	0.032 gm 8 ml
Bottle 23	p,p'-Tetramethyldiaminodi- phenylmethane (0.1 gm/bottle) Ethyl alcohol (2 ml/bottle) 2 bottles/kit	0.2 gm 4 ml
Bottle 24	Sodium hydroxide (0.5 gm/bottle) Sodium sulfite (0.5 mg/bottle) 2 bottles/kit	1 gm 1 gm
Bottle 25	Acetic acid, 1.0N (1 ml/bottle) 2 bottles/kit	2 ml

Form	Content/Unit	Total Quantity/Kit
Bottle 26	Tetrabromophthalein- ethylester (0.002 gm/bottle) Ethyl alcohol (2 ml/bottle) 4 bottles/kit	0.008 gm 8 ml
Bottle 27	Empty	
Bottle 28	Sodium perborate, tetrahydrate (1 mg/straw) Sodium chloride (20 mg/straw) 15 straws/bottle, 4 bottles/kit	60 mg 1200 mg
Bottle 29	Hydrochloric acid, concentrated, (0.75 ml/bottle) Sodium molybdate dihydrate (0.44 gm/bottle) Ortho-dianisidine dihydrochloride (0.008 gm/bottle) 2 bottles/kit	1.50 ml 0.88 gm 0.016 gm
Bottle 30	Neotetrazolium chloride (0.02 gm/bottle) Ethyl alcohol (2 ml/bottle) 2 bottle/kit	0.04 gm 4 ml
Alcohol tubes	Ethyl alcohol (35 ml/tube) 10 tubes/box, 2 boxes/kit	700 ml
Anticholinesterase detector ticket	Horse serum cholinesterase (0.2 mg) impregnated on a glass fiber disk 2 disks/ticket, 200 tickets/kit	80 mg
Detector tube/ blue band	Silica gel ((0.024 gm/tube) Mercuric cyanide (0.00028 gm/tube) 4-(4'-nitrobenzyl) pyridine (0.00018 gm/tube) 25 tubes/clip 2 clips/kit	1.2 gm 0.014 gm 0.009 gm

Form	Content/Unit	Total Quantity/Kit
Detector tube/ red band	Silica gel (0.05 gm/tube) Copper sulfate (0.00018 gm/tube) p,p'-Tetramethyldiamino- diphenylmethane (0.000006 gm/tube) Charcoal (0.02 gm) 25 tubes/kit	1.2 gm 0.0045 gm 0.00015 gm 0.5 gm
Detector tube/ green band	Silica gel (0.024 gm/tube) p-Dimethylaminobenzaldehyde (0.24 mg/tube) N-phenyl-l-naphthylamine (0.24 mg/tube) Thiourea (0.024 mg/tube) 15 tubes/clip, 3 clips/kit	1.08 gm 10.8 mg 1.08 mg
Detector tube/ yellow band	Silica gel (0.024 gm/tube) Ammonium molybdate (1.32 mg/tube) Zinc sulfate (1.32 mg/tube) 15 tubes/clip, 3 clips/kit	1.08 gm 59.4 mg 59.4 mg
Detector tube/ double yellow band	Silica gel (0.024 gm/tube) Cupric nitrate (0.398 mg/tube) Potassium iodide (0.01728 gm/tube) 15 tubes/clip, 3 clips/kit	1.08 gm 17.91 gm 0.7776 gm
Detector tube/ double green band	Silica gel (0.024 gm/tube) m-Dinitrobenzene (0.01 gm/tube) 15 tubes/clip, 3 clips/kit	1.08 gm 0.45 gm
Detector tube/ white band	Silica gel (0.024 gm/tube) 15 tubes/clip, 24 clips/kit	8.64 gm
Container swabs	Empty	

Form	Content/Unit	Total Quantity/Kit
d. Booklet		
ABC-M8 detector paper	See Section 2-15	4 bkts
e. Soil Sampling Kit (2 kits)		
Extraction fluid bottle	Magnesium sulfate anhydrous (5 gm/bottle) 2 bottles/kit	20 gm
f. Vapor Kit (1 kit)		
Anticholinesterase detector ticket	Horse serum cholinesterase (0.2 mg) impregnated on a glass fiber disk 2 disks/ticket, 40 tickets/kit	16 mg
Vial (swab liquid bottle)	Bacto-tryptose (0.01 gm bottle)	0.04 gm
	sodium chloride (0.085 gm/bottle) 4 bottles/vial, 1 vial/kit	0.34 gm
Syrette, benzene	Benzene solution (1.5 ml/syrette) 30 syrettes/kit	45 ml

2-21. Sampling Kit, CBR Agent M34.

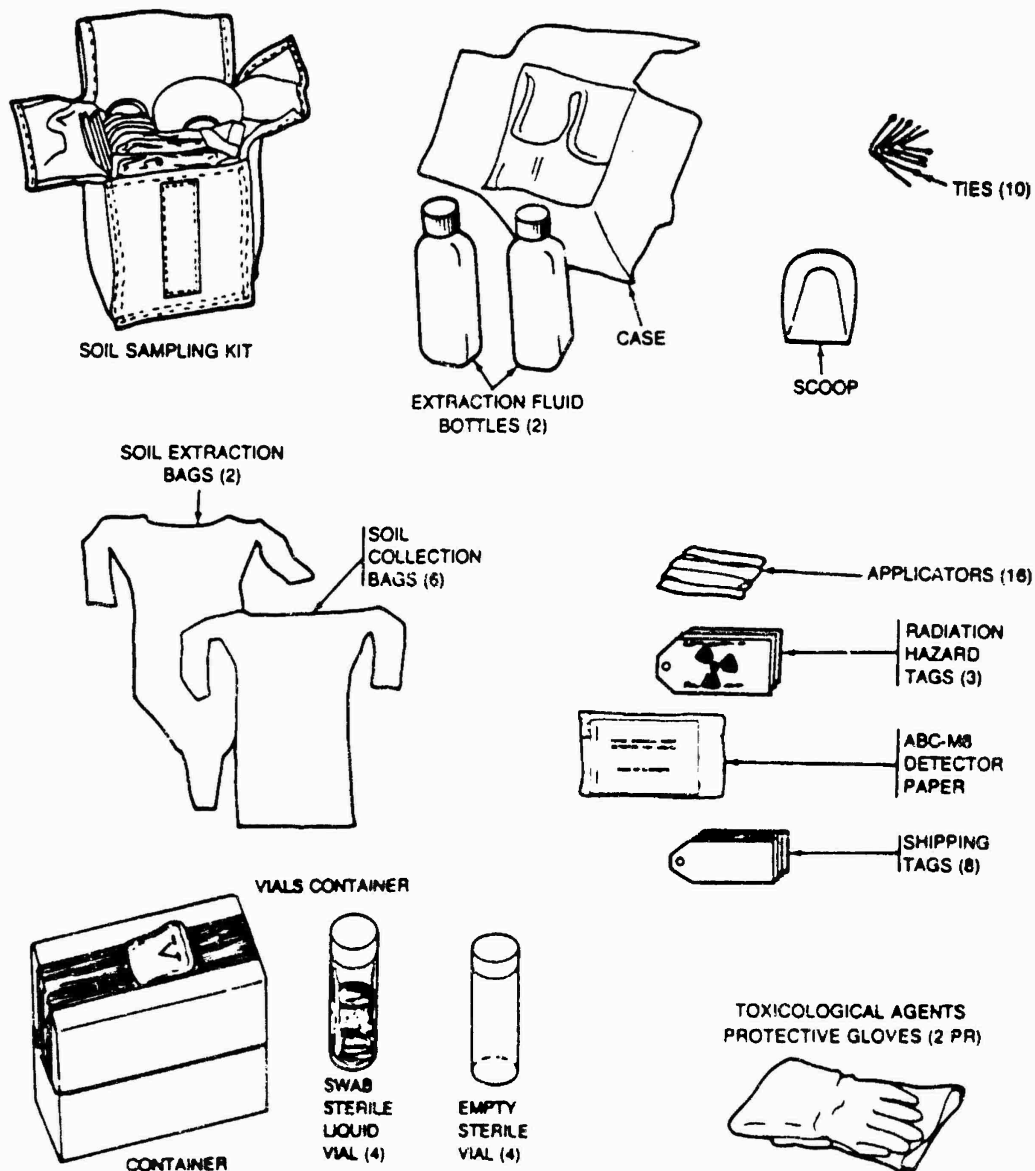


Figure 16. Sampling Kit, CBR Agent: M34

Form	Content/Unit	Total Quantity/Kit
a. Soil Sampling Kit (2 Kits)		
Extraction Fluid Bottle	Magnesium Sulfate Anhydrous (5 gm/bottle) 2 bottles/kit	20 gm

Form	Content/Unit	Total Quantity/Kit
b. Container Vials		
Box Vial (Swab Liquid Bottle)	Bacto-tryptose (0.01 gm) Sodium Chloride (0.085 gm) 4 vials/kit	0.04 gm 0.34 gm

2-22. Simulator, Detector Tickets, Chemical Agent M5. Illustration not shown.

Form	Content/Unit	Total Quantity/Kit
a. Anticholinesterase detector ticket		
Square end	Horse serum cholinesterase (0.2 mg) impregnated on filter paper 40 tickets/kit	8 mg
Round end	Horse serum cholinesterase (0.2 mg) impregnated on filter paper 40 tickets/kit	8 mg

b. Simulated detector ticket

Form	Content/Unit	Total Quantity/Kit
Square end	Filter paper	
Round end	Filter paper	

2-23. Simulator, Detector Tickets, Chemical Agent: Training (M256) (TRAINS)

a. Sampler (T-400) (12 samplers contained in each kit)

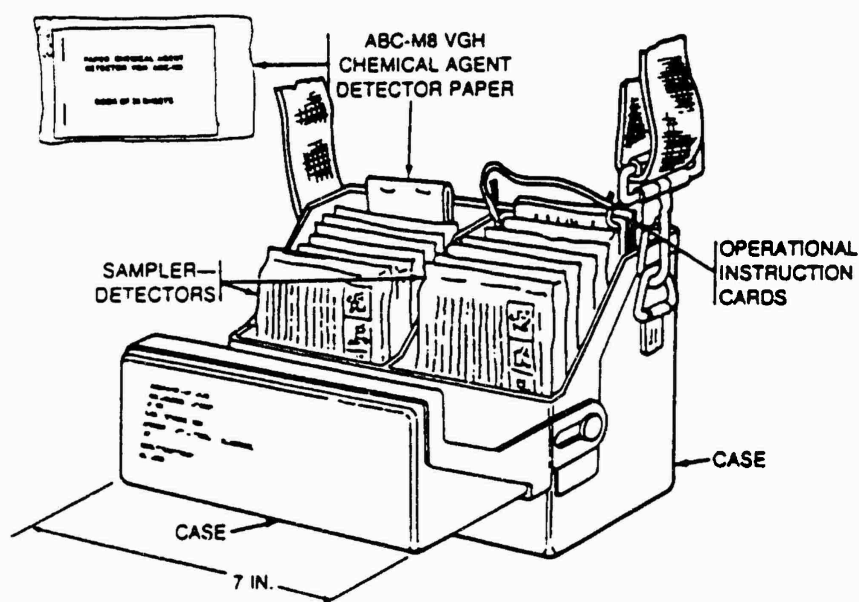
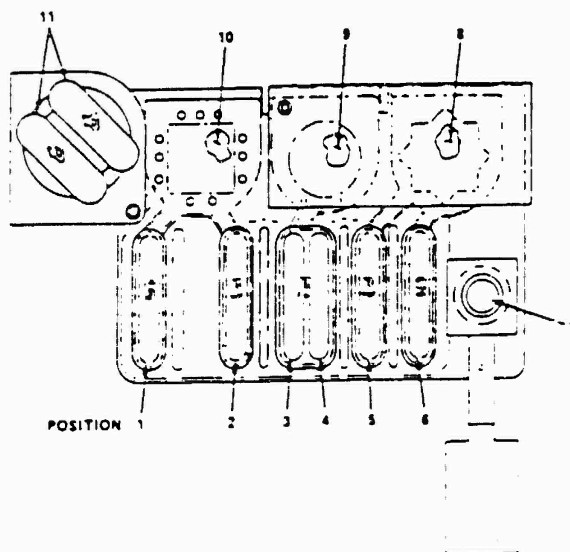


Figure 17. M256/M256A1 Chemical Agent Detector Kit



Location of Components of the M256/M256A1 Chemical Agent Detector Kit

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (clear liquid with black tubing) Position #1	Methanol (0.1 ml/ampoule) Water (0.1 ml/ampoule) 1 ampoule/sampler	1.2 ml 1.2 ml

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 3 (clear liquid with black tubing) Position #2	Methanol (0.1 ml/ampoule) Water (0.1 ml/ampoule) 1 ampoule/sampler	1.2 ml 1.2 ml
Ampoule No. 3 (clear liquid with black tubing) Position #3	Methanol (0.1 ml/ampoule) Water (0.1 ml/ampoule) 1 ampoule/sampler	1.2 ml 1.2 ml
Ampoule No. 3 (clear liquid with black tubing) Position #4	Methanol (0.1 ml/ampoule) Water (0.1 ml/ampoule) 1 ampoule/sampler	1.2 ml 1.2 ml
Ampoule No. 3 (clear liquid with orange pellet) Position #5	Tris-(Hydroxymethyl)- Aminomethane (0.00303 gm/ampoule) Hydrochloric acid, 0.1N (0.143 ml/ampoule) Aerosol OT (0.13 mg/ampoule) 1 ampoule/sampler	36.36 mg 1.72 ml 1.56 mg
Ampoule No. 5 (pink liquid) Position #6	2,6-Dichloroindophenyl acetate (0.195 mg/ampoule) Ligroine (0.3 ml/ampoule) 1 ampoule/sampler	2.34 mg 3.6 ml
Pellet (tab 1) Position #7	4,4'-Bis (dimethylamino)- thiobenzophenone (0.022 gm/sampler) Zinc oxide (0.088 gm/sampler) Titanium dioxide (0.088 gm/sampler) Amorphous silica (0.088 gm/sampler) Ball clay (0.0202 gm/sampler) Amioca starch (0.0044 gm/sampler) Microcrystalline cellulose (Avicel) (0.1162 gm/sampler)	0.264 gm 1.056 gm 1.056 gm 1.056 gm 0.2424 gm 0.0528 gm 1.394 gm

Form	Content/Unit	Total Quantity/Kit
	Stearic acid (0.0132 gm/sampler)	0.158 gm
Detector spot (star shape) Position #8	Horse serum cholinesterase (2-5 units) and 0.5 mg of gelatin impregnated on filter paper disk	
Detector spot (circular shape) Position #9	Chromatography grade silica gel paper	
Detector spot (square) Position #10	Chromatography grade silica gel paper	
Ampoule No. 4 (double, green) Position #11	Cupric chloride (0.8 gm/sampler)	9.6 gm
	Ethylene glycol (0.4 gm/sampler)	4.8 gm
	Distilled water (0.8 ml/sampler) 1 ampoule/sampler	9.6 ml
Heater Pad (under ampoule in Position #11)	Aluminum powder (0.285 gm)	3.42 gm
	Paper pulp (0.189 gm) 1 pad/sampler	2.27 gm
b. Sampler (T-401) (6 samplers contained in each kit)		
Ampoule No. 5 (clear liquid with black tubing) Position #1	Methanol (0.1 ml/ampoule)	0.6 ml
	Water (0.1 ml/ampoule) 1 ampoule/sampler	0.6 ml
Ampoule No. 3 (clear liquid with black tubing) Position #2	Methanol (0.1 ml/ampoule)	0.6 ml
	Water (0.1 ml/ampoule) 1 ampoule/sampler	0.6 ml
Ampoule No. 3 (clear liquid with black tubing) Position #3	Methanol (0.1 ml/ampoule)	0.6 ml
	Water (0.1 ml/ampoule) 1 ampoule/sampler	0.6 ml

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 3 (clear liquid with black tubing) Position #4	Methanol (0.1 ml/ampoule) Water (0.1 ml/ampoule) 1 ampoule/sampler	0.6 ml 0.6 ml
Ampoule No. 3 (clear liquid with orange tubing) Position #5	Tris-(hydroxymethyl)- aminomethane (0.00303 gm/ampoule) Hydrochloric acid, 0.1N (0.143 ml/ampoule) Aerosol OT (0.12 mg/ampoule) 1 ampoule/sampler	18.18 mg 0.76 ml 0.72 gm
Ampoule No. 5 (pink liquid) Position #6	2,6-Dichloroindophenyl acetate (0.195 mg/ampoule) Ligroine (0.3 ml/ampoule) 1 ampoule/sampler	1.17 mg 1.8 ml
Pellet (tab 1) Position #7	4,4'-Bis-(dimethylamino) thiobenzophenone (0.022 gm/ampoule) Zinc oxide (0.088 gm/ampoule) Titanium dioxide (0.088 gm/ampoule) Amorphous silica (0.088 gm/ampoule) Ball clay (0.0202 gm/ampoule) Amioca starch (0.0044 gm/ampoule) Microcrystalline cellulose (Avicel) (0.1162 gm/ampoule) Stearic acid (0.0132 gm/ampoule) 1 ampoule/sampler	0.132 gm 0.528 gm 0.528 gm 0.528 gm 0.1212 gm 26.4 mg 0.697 gm 79.2 mg
Detector spot (star shape) Position #8	Unimpregnated glass filter disk	
Detector spot (circular shape) Position #9	Unimpregnated chromatography grade silica gel paper	

Form	Content/Unit	Total Quantity/Kit
Detector spot (square) Position #10	Unimpregnated chromatography grade silica gel paper	
Ampoule No. 4 (double) Position #11	Cupric chloride (0.8 gm/sampler) Ethylene glycol (0.4 gm/sampler) Distilled water (0.8 ml/sampler)	4.8 gm 2.4 gm 4.8 gm
Heater Pad (under ampoule in Position #11)	Aluminum powder (0.285 gm/sampler) Paper pulp (0.189 gm/sampler) 1 pad/sampler	1.71 gm 1.134 gm

c. Sampler (T-402) (6 samplers contained in each kit)

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (clear liquid with red tubing) Position #1	Potassium carbonate (0.24 gm/sampler) Water (0.4 ml/sampler)	1.44 gm 2.4 ml
Ampoule No. 3 (clear liquid with blue tubing) Position #2	Thymolphthalein (0.02 mg/sampler) Methanol (0.2 ml/sampler)	0.06 mg 1.2 ml
Ampoule No. 3 (clear liquid with black tubing) Position #3	Methanol (0.1 ml/sampler) Water (0.1 ml/sampler)	0.6 ml 0.6 ml
Ampoule No. 3 (clear liquid with black tubing) Position #4	Methanol (0.1 ml/sampler) Water (0.1 ml/sampler)	0.6 ml 0.6 ml
Ampoule No. 3 (clear liquid with orange tubing) Position #5	Tris-(hydroxymethyl)- aminomethane (0.00303 gm/sampler) Hydrochloric acid, 0.1N (0.143 ml/sampler) Aerosol OT (0.13 mg/sampler)	0.1818 gm 0.86 ml 0.78 mg

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (pink liquid) Position #6	2,6-Dichloroindophenyl acetate (0.000195 gm/sampler)	1.17 mg
	Ligroine (0.3 ml/sampler)	1.8 ml
Pellet (tab 1) Position #7	4,4-Bis (dimethylamino)- thiobenzophenone (0.022 gm/sampler)	0.132 gm
	Zinc oxide (0.088 gm/sampler)	0.528 gm
	Titanium dioxide (0.088 gm/sampler)	0.528 gm
	Amorphous silica (0.088 gm/sampler)	0.528 gm
	Ball clay (0.0202 gm)	0.1212 gm
	Amioca starch (0.0044 gm/sampler)	0.0264 gm
	Microcrystalline cellulose (Avicel) (0.116 gm/sampler)	0.697 gm
	Stearic acid (0.0132 gm/sampler)	79.2 mg
Detector spot (star shape) Position #8	Horse serum cholinesterase (2-5 units) and 0.5 mg of gelatin impregnated on filter paper disk	
Detector spot (circular shape) Position #9	Chromatography grade silica gel paper	
Detector spot (square) Position #10	Chromatography grade silica gel paper	
Ampoule No. 4 (double) (green liquid) Position #11	Cupric chloride (0.8 gm/sampler)	9.6 gm
	Ethylene glycol (0.4 gm/sampler)	4.8 gm
	Distilled water (0.8 ml/sampler)	9.6 ml
Heater Pad (under ampoule in Position #11)	Aluminum powder (0.285 gm)	1.71 gm
	Paper pulp (0.189 gm) 1 pad/sampler	1.13 gm

d. Sampler (T-403) (6 samplers contained in each kit)

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (clear liquid with red tubing) Position #1	Potassium carbonate (0.24 gm/sampler) Water (0.4 ml/sampler)	1.44 gm 2.4 ml
Ampoule No. 3 (clear liquid with brown tubing) Position #2	Phenolphthalein (0.025 mg/sampler) Methanol (0.2 ml/sampler)	0.15 gm 1.2 ml
Ampoule No. 3 (clear liquid with black tubing) Position #3	Methanol (0.1 ml/sampler) Water (0.1 ml/sampler)	0.6 ml 0.6 ml
Ampoule No. 3 (clear liquid with black tubing) Position #4	Methanol (0.1 ml/sampler) Water (0.1 ml/sampler)	0.6 ml 0.6 ml
Ampoule No. 3 (clear liquid with orange pellet) Position #5	Tris-(hydroxymethyl)- aminomethane (0.00303 gm/sampler) Hydrochloric acid, 0.1N (0.143 ml/sampler) Aerosol OT (0.13 mg/sampler)	18.18 mg 0.858 ml 0.78 mg
Ampoule No. 5 (pink liquid) Position #6	2,6-Dichloroindophenyl acetate (0.195 mg/sampler) Ligroine (0.3 ml/sampler)	1.17 mg 1.8 ml
Pellet (tab 1) Position #7	4,4-Bis-(dimethylamino)- thiobenzophenone (0.022 gm/sampler) Zinc oxide (0.088 gm/sampler) Titanium dioxide (0.088 gm/sampler) Amorphous silica (0.088 gm/sampler) Ball clay (0.0202 gm/sampler) Amioca starch (0.0044 gm/sampler)	0.132 gm 0.528 gm 0.528 gm 0.528 gm 0.1212 gm 0.0264 gm

Form	Content/Unit	Total Quantity/Kit
	Microcrystalline cellulose (Avicel) (0.116 gm/sampler)	0.697 gm
	Stearic acid (0.0132 gm/sampler)	79.2 mg
Detector spot (star shape) Position #8	Horse serum cholinesterase (2-5 units) and 0.5 mg of gelatin impregnated on filter paper disk	
Detector spot (circular shape) Position #9	Chromatography grade silica gel paper	
Detector spot (square) Position #10	Chromatography grade silica gel paper	
Ampoule No. 4 (double, green liquid) Position #11	Cupric chloride (0.8 gm/sampler)	4.8 gm
	Ethylene glycol (0.4 gm/sampler)	2.4 gm
	Distilled water (0.8 ml/sampler)	4.8 ml
Heater Pad (under ampoule in Position #11)	Aluminum powder (0.285 gm/pad)	1.71 gm
	Paper pulp (0.189 gm/pad)	1.134 gm
e. Sampler (T-404) (3 samplers contained in each kit)		
Ampoule No. 5 (clear liquid with black tubing) Position #1	Methanol (0.1 mg/sampler)	0.3 ml
	Water (0.1 ml/sampler)	0.3 ml
Ampoule No. 3 (clear liquid with black tubing) Position #2	Methanol (0.1 ml/sampler)	0.3 ml
	Water (0.1 ml/sampler)	0.3 ml
Ampoule No. 3 (clear liquid with red tubing) Position #3	Potassium carbonate (0.12 gm/sampler)	0.36 gm
	Water (0.2 ml/sampler)	0.6 ml

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 3 (clear liquid with red tubing) Position #4	Potassium carbonate (0.12 gm/sampler) Water (0.2 ml/sampler)	0.36 gm 0.6 ml
Ampoule No. 3 (clear liquid with orange pellet) Position #5	Tris-(hydroxymethyl)- aminomethane (0.00303 gm/sampler) Hydrochloric acid, 0.1N (0.143 ml/sampler) Aerosol OT (0.13 ml/sampler)	9.09 mg 0.429 ml 0.39 mg
Ampoule No. 5 (pink liquid) Position #6	2,6-Dichloroindophenyl acetate (0.195 mg/sampler) Ligroine (0.3 ml/sampler)	0.585 mg 0.9 ml
Pellet (tab 1) Position #7	4,4-Bis-(dimethylamino)- thiobenzophenone (0.022 gm/sampler) Zinc oxide (0.088 gm/sampler) Titanium dioxide (0.088 gm/sampler) Amorphous silica (0.088 gm/sampler) Ball clay (0.0202 gm/sampler) Amioca starch (0.0044 gm/sampler) Microcrystalline cellulose (Avicel) (0.1162 gm/sampler) Stearic acid (0.0132 gm/sampler)	0.066 gm 0.264 gm 0.264 gm 0.264 gm 0.0606 gm 0.0132 gm 0.348 gm 0.396 gm
Detector spot (star shape) Position #8	Horse serum cholinesterase (2-5 units) and 0.5 mg of gelatin impregnated on filter paper disk	
Detector spot (circular shape) Position #9	Thymolphthalein (0.001 mg/sampler) Methanol (0.05 ml/sampler)	0.003 mg
Detector spot (square shape) Position #10	Chromatography grade silica gel paper	

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 4 (double, green liquid) Position #11	Cupric chloride (0.8 gm/sampler) Ethylene glycol (0.4 gm/sampler) Distilled water (0.8 ml/sampler)	2.4 gm 1.2 gm 2.4 ml
Heater Pad (under ampoule in Position #11)	Aluminum powder (0.285 gm) Paper pulp (0.189 gm)	0.855 gm 0.567 gm

f. Sampler T-404A) (3 samplers contained in each kit)

Form	Content/Unit	Total Quantity/Kit
Ampoule No. 5 (clear liquid with black tubing) Position #1	Methanol (0.1 mg/sampler) Water (0.1 ml/sampler)	0.3 ml 0.3 ml
Ampoule No. 3 (clear liquid with black tubing) Position #2	Methanol (0.1 ml/sampler) Water (0.1 ml/sampler)	0.3 ml 0.3 ml
Ampoule No. 3 (clear liquid with red tubing) Position #3	Potassium carbonate (0.12 gm/sampler) Water (0.2 ml/sampler)	0.36 gm 0.6 ml
Ampoule No. 3 (clear liquid with red tubing) Position #4	Potassium carbonate (0.12 gm/sampler) Water (0.2 ml/sampler)	0.36 gm 0.6 ml
Ampoule No. 3 (clear liquid with orange pellet) Position #5	Tris-(hydroxymethyl)-aminomethane (0.00303 gm/sampler) Hydrochloric acid, 0.1N (0.143 ml/sampler) Aerosol OT (0.13 ml/sampler)	9.09 mg 0.429 ml 0.39 mg
Ampoule No. 5 (pink liquid) Position #6	2,5-Dichloroindophenyl acetate (0.195 mg/sampler) Ligroine (0.3 ml/sampler)	0.585 mg 0.9 ml

Form	Content/Unit	Total Quantity/Kit
Pellet (tab 1) Position #7	4,4-Bis-(dimethylamino)- thiobenzophenone (0.022 gm/sampler) Zinc oxide (0.088 gm/sampler) Titanium dioxide (0.088 gm/sampler) Amorphous silica (0.088 gm/sampler) Ball clay (0.0202 gm/sampler) Amioca starch (0.0044 gm/sampler) Microcrystalline cellulose (Avicel) (0.1162 gm/sampler) Stearic acid (0.0132 gm/sampler)	0.066 gm 0.264 gm 0.264 gm 0.264 gm 0.0606 gm 0.0132 gm 0.348 gm 0.396 gm
Detector spot (star shape) Position #8	Horse serum cholinesterase (2-5 units) and 0.5 mg of gelatin impregnated on filter paper disk	
Detector spot (circular shape) Position #9	Thymolphthalein (0.001 mg/sampler) Methanol (0.05 ml/sampler)	0.003 mg
Detector spot (square shape) Position #10	Chromatography grade Silica gel paper	
Ampoule No. 4 (double, green liquid) Position #11	Cupric chloride (0.8 gm/sampler) Ethylene glycol (0.4 gm/sampler) Distilled water (0.8 ml/sampler)	2.4 gm 1.2 gm 2.4 ml
Heater Pad (under ampoule in) Position #11	Aluminum powder (0.285 gm) Paper pulp (0.189 gm)	0.855 gm 0.567 gm

2-24. Supertropical Bleach (STB). Illustration not shown

Compound	Total Quantity
Chlorinated Lime	93 wt %
Calcium Oxide	6%
Water	1%

2-25. Training Aid, Skin Decontaminating, M58. Illustration not shown

Form	Content/Unit	Total Quantity/Kit
Bottle I	2-Propanol, 50% in water solution	40 ml
Bottle II	2-Propanol, 50% in water solution	53 ml
Ampoule (Inside of Bottle II)	Sodium chloride	17 gm

2-26. Training A Decontaminating, M58A1. Illustration not shown

Form	Content/Unit	Total Quantity/Kit
Packet I	Isopropanol (50%) Water (50%)	4.5 ml
Packet II	Isopropanol (50%) Water (50%)	4.5 ml

2.27. Training Set, Chemical Agent Identification, Simulants: M72A1 (SCAITS A1).



Figure 18. M72A1 Simulants Chemical Agent Identification Training Set (SCAITS A1)

Form	Content/Unit	Total Quantity/Kit
Ampoule, H	Dimethyl sulfate (0.3 ml/ampoule) 50 ampoules/kit	15 ml
Ampoule, L	Phenyldiazine (0.3 ml/ampoule) 50 ampoules/kit	15 ml
Ampoule, G	Benzoyl chloride and benzene sulfonyl chloride (1:1 mix by volume) (0.3 ml/ampoules) 50 ampoules/kit	15 ml
Ampoule, V	Acetic acid, glacial (1 ml/ampoule) 50 ampoules/kit	50 ml
Ampoule, CK-1	Sodium hypochlorite (5.25%) (1 ml/ampoule) 50 ampoules/kit	50 ml
Ampoule, CK-2	Sodium thiocyanate (130 grams/100 ml) (1 ml/ampoule) 50 ampoules/kit	50 ml

Form	Content/Unit	Total Quantity/Kit
Ampoule, CX	Benzoyl chloride and benzene sulfonyl chloride (1:1 mix by volume) (0.3 ml/ampoule) 50 ampoules/kit	15 ml
Ampoule, AC	Sodium hypochlorite (5.25 wt vol %) (1 ml/ampoule) 50 ampoules/kit	50 ml
Ampoule, GC	Phenyl chloroformate (0.3 ml/ampoule) 50 ampoules/kit	15 ml
Bottles	H, G, and V - same as bottles in the M72A2 (below)	

NOTE: Ampoule forms contain vapor agent simulants. Bottle forms contain liquid agent simulants.

2-28. Training Set, Chemical Agent Identification, Simulants: M72A2 (SCAITS A2).



Figure 19. M72A2 Simulants Chemical Agent Identification Training Set (SCAITS A2)

Form	Content/Unit	Total Quantity/Kit
Ampoule, H	Dimethyl sulfate (0.3 ml/ampoule) 50 ampoules/kit	15 ml

Note	Content/Unit	Total Quantity/Kit
Ampoule, L	Potassium iodide (2.5 wt/vol %) and iodine (3.5 wt/vol %) (0.3 ml/ampoule) 50 ampoules/kit	15 ml
Ampoule, NA	Concentrated acetic acid, glacial (99.7%) (1 ml/ampoule) 50 ampoules/kit	50 ml
Ampoule, B-1	Sodium hypochlorite (5.25 wt/vol %) (1 ml/ampoule) 50 ampoules/kit	50 ml
Ampoule, B-2	Sodium thiocyanate (130 gm/100 ml) (1 ml/ampoule) 50 ampoules/kit	50 ml
Bottle, H	Isoamyl salicylate (20 ml/bottle) 1 bottle/kit	20 ml
Bottle, G	Hexylene glycol (13.5 ml/bottle)	13.5 ml
	2-Methoxyethanol (6.5 ml/bottle) 1 bottle/kit	6.5 ml
Bottle, V	Tetrahydrofurfuryl alcohol	3.37 gm
	N-methylglucamine	0.77 gm
	Diethylene glycol 1 bottle/kit	18.78

NOTE: Ampoule forms contain vapor agent simulants. Bottle forms contain liquid agent simulants.

2-29. Water Testing Kit, Chemical Agents, AN-M2. Illustration not shown

Form	Content/Unit	Total Quantity/Kit
Tablet	Potassium bisulfate (0.4869 gm/tablet) 30 tablets/kit	14.6 gm
Test paper	Mercuric chloride (0.00596 gm/piece of paper) 15 pieces of paper/kit	0.0894

Form	Content/Unit	Total Quantity/Kit
Tablet	Zinc (0.3063 gm/pellet) 75 pellets/kit	22.98 gm
Tablet	Urea (92%), potassium chlorate (5%), and 4-(4'-nitrobenzyl) pyridine (DB-3) (3%) (0.0968 gm/tablet) 15 tablets/kit	1.4515 gm
Tablet	Potassium carbonate (0.25 gm/tablet) 30 tablets/kit	7.5 gm
Test paper	Nitrazine (0.0233 gm/piece of paper) 15 pieces of paper/kit	0.32 gm
Tablet	Halazone (0.1300 gm/tablet) 55 tablets/kit	7.15 gm
Tablet	ortho-Dianisidine hydrochloride, lactose, acacia, sodium chloride, and potassium carbonate (0.042 gm/tablet) 20 tablets/kit	0.84 gm
Tablet	Sodium hexametaphosphate (0.285 gm/tablet) 40 tablets/kit	11.8 gm
Powder	Sodium perborate	5 gm
Glass ampoule, liquid	Acetate (25%) and xylene (75%)	1 ml
Tablet	ortho-Tolidine dihydro- chloride, potassium bisulfate, and sodium chloride (0.22 gm/tablet) 50 tablets/kit	11 gm

2-30. Water Testing Kit, Chemical Agents, M272.

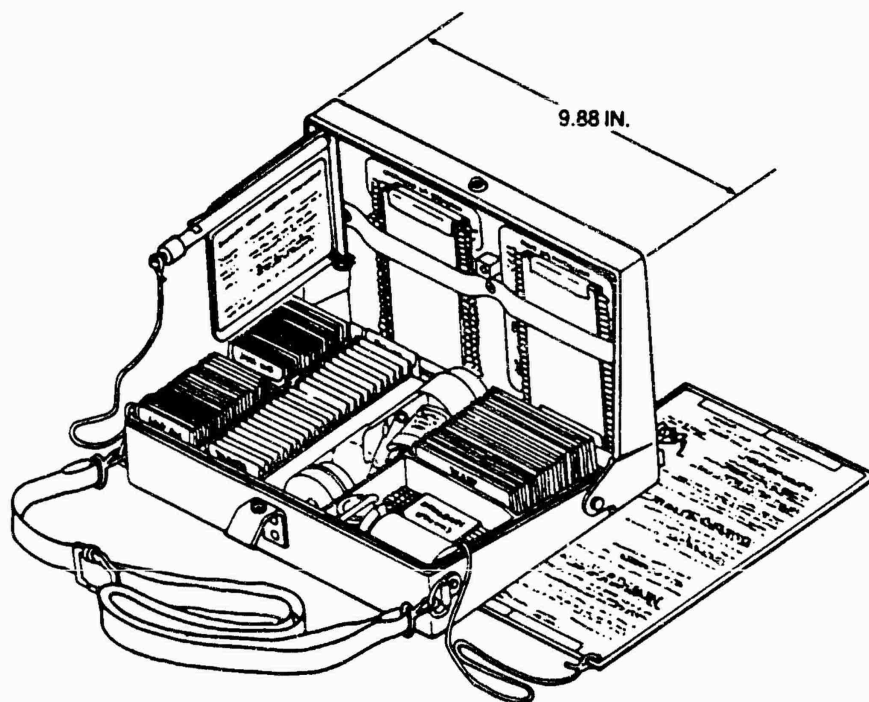


Figure 20. Water Testing Kit, Chemical Agents: M272

Form	Content/Unit	Total Quantity/Kit
Detector tube blue band	Silica gel	1.2 gm
	(0.024 gm/tube)	
	Mercuric cyanide	1.014 gm
	(0.00028 gm/tube)	
	4-(4'-nitrobenzyl)-pyridine	0.009 gm
	(0.00018 gm/tube)	
	25 tubes/clip,	
	2 clips/kit	
Detector tube red band	Silica gel	1.2 gm
	(0.05 gm/tube)	
	Copper sulfate	0.0045 gm
	(0.00018 gm/tube)	
	p,p'-Tetramethyldiamino diphenylmethane	0.00015 gm
	(0.000006 gm/tube)	
	Charcoal (0.02 gm)	0.5 gm
	25 tubes/kit	

Form	Content/Unit	Total Quantity/Kit
Ticket packet	Potassium ferrocyanide	0.012 gm
Substrate disc (5/8 in.- diameter filter paper disc)	(0.00048 gm/packet) Potassium ferricyanide (0.00006 gm/packet) Indoxyl acetate (0.00009 gm/packet)	0.0015 gm 0.0023 gm
Enzyme disc (1/2 in.- diameter paper disc)	Eel acetyl cholinesterase (0.008 mg/ticket or 0.8 unit/ticket) Buffer, pH8: Piperazine-N, N'-bis- (2-hydroxy-propane sulfonic acid) (POPSO) (0.00664 gm/packet) Bovine serum albumin (0.00015 gm/packet) "Triton" X-100 solution (0.0000045 ml)	0.2 gm 0.165 gm 0.00375 gm 0.000113 ml
Impregnated pad	Silica gel impregnated in paper base	
Salt mix packet	Sodium chloride crystal (2.388 gm/packet) Sodium thiosulfate anhydrous powder (0.012 gm/packet) 2.4 gm/packet, 25 packets/kit	59.7 gm 0.3 gm
Zinc mix packet	Zinc powder: (1.94 gm/packet) Potassium hydrogen sulfate (1.94 gm/packet) cupric sulfate anhydrous (0.0195 gm/packet) 3.9 gm/packet, 25 packets/kit	48.5 gm 48.5 gm 0.4875 gm
Tablets packet Sodium bicarbonate tablet (white)	Sodium bicarbonate (1.4 gm/tablet) Corn starch powder (0.179 gm/tablet) Talc powder (0.0238 gm/tablet) 1.4 gm/tablet, 25 tablets/kit	29.925 gm 4.475 gm 0.595 gm

Form	Content/Unit	Total Quantity/Kit
Tartaric acid tablet (yellow)	Tartaric acid granular	26.923 gm
	(1.0769 gm/tablet)	
	Talc powder	0.55 gm
	(0.022 gm/tablet)	
	FDA Yellow No. 5	0.0275 gm
	(0.001 gm/tablet)	
	1.1 gm/tablet,	
	25 tablets/kit	
Alkaline solution bottle	Sodium hydroxide	0.68 gm
	(0.68 gm/bottle)	
	1 bottle/kit	
Simulant tube Yellow-Mustard	Epichlorohydrin	100 mg
	(20 mg/tube)	
	Pore glass (30 mg/tube)	150 mg
	5 tubes/kit	
Red-Cyanide	Potassium cyanide granular	50 mg
	(10 mg/tube)	
	Sand	200 mg
	(40 mg/tube)	
	5 tubes/kit	
Orange-Lewisite	Sodium arsenite, META-powder	9 mg
	(1.8 mg/tube)	
	Sodium chloride	241 mg
	(48.2 mg/tube)	
	5 tubes/kit	
White-Nerve	SEVIN 50W powder	12.5 mg
	Carbaryl	
	(1,1'-apthyl-N-methyl-carbonate)	
	(22.5 mg/tube)	
	Inerts	112.5 mg
	(22.5 mg/tube)	
	Sand	900 mg
	(180 mg/tube)	
	5 tubes/kit	
Match	Safety match, lacquer	
	70 matches/kit	